report

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Engineering, Architecture, Planning
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FINAL REPORT

IMPLICATIONS OF CHANGES IN RAIL SERVICE ON DEVELOPMENT IN NOVA SCOTIA

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TABLE OF CONTENTS

Page

Executive Summary i

1.0 BACKGROUND 1.1

2.0 OBJECTIVE AND SCOPE 2.1

2.1 Objective 2.1
2.2 Scope 2.1

3.0 GENERAL APPROACH AND METHODOLOGY 3.1

3.1 Introduction 3.1

4.0 MODAL EVOLUTION PATTERNS 4.1

4.1 Introduction 4.1
4.2 Rail Transport 4.1

4.2.1 Total Tonnage and Revenues 4.1
4.2.2 Tonnage and Revenue by Commodity Group .. 4.2
4.2.3 Traffic Levels by Line 4.4

4.3 Truck Transport 4.4

4.3.1 Total Tonnage and Revenue 4.4
4.3.2 Tonnage and Revenue by Major Commodity Group 4.5
4.3.3 Trucking Revenues by Province 4.6
4.3.4 Private Trucking Industry 4.7

4.4 Modal Split 4.7

4.4.1 Tonnage and Revenue 4.7
4.4.2 Modal Split by Major Commodity Group 4.7

4.5 Summary 4.9

5.0 PROFILES OF RAIL-ORIENTED COMMODITIES 5.1

5.1 Introduction 5.1
5.2 Coal 5.1

5.2.1 Current Shipments 5.1
5.2.2 Future Developments 5.3
5.2.3 Transportation Requirements 5.3

5.3 Gypsum 5.5

5.3.1 Current Shipments 5.5
5.3.2 Transportation Requirements 5.6
5.3.3 Transportation Alternatives 5.7

TABLE OF CONTENTS (continued)

Page

5.4 Halifax Container Traffic 5.7

5.4.1 Current Shipments 5.7
5.4.2 Port of Halifax Traffic Projections ... 5.9
5.4.3 Alternatives to Rail 5.9

6.0 SHIPPER/RECEIVER SURVEY 6.1

6.1 Survey Objective 6.1
6.2 Survey Methodology 6.1
6.3 Shipper Survey Results 6.4

7.0 EFFECT OF NEWFOUNDLAND RAILWAY CLOSURE 7.1

7.1 Introduction 7.1
7.2 Alternative Routings 7.2
7.3 RTC Decision 7.3
7.4 Implications for Nova Scotia Rail Users 7.5

8.0 IMPACT OF CHANGES TO PRINCE EDWARD ISLAND TRANSPORTATION SYSTEM 8.1

8.1 Introduction 8.1
8.2 Impact of Fixed Link on Highway System 8.1
8.3 Impact of Railway Closure 8.5
8.4 Summary 8.8

9.0 IMPLICATIONS OF VIA RAIL PASSENGER SERVICE 9.1

10.0 IMPACTS OF SELECTED CLOSURES 10.1

10.1 Introduction 10.1
10.2 Impact on Companies Rating Service as Indispensable 10.2
10.3 Impact on Companies Rating Service as Important/Highly Important 10.3
10.4 Implications for Future Development Patterns . 10.4

11.0 RAIL COSTING: TRURO TO SYDNEY LINE 11.1

11.1 Introduction 11.1
11.2 Revenue/Cost Comparison 11.3
11.3 RTAC Vehicle Weights and Dimensions 11.6
11.4 Impact of Traffic Losses on Rail Freight 11.8
11.5 Implications of Extending the Laser Service .. 11.13

TABLE OF CONTENTS (continued)

Page

12.0 SUMMARY AND CONCLUSIONS 12.1

- 12.1 Comparison of Modal Shares 12.1
- 12.2 Shipper/Receiver Survey 12.2
- 12.3 Closure of Truro-Sydney and East River-Halifax Lines 12.3
- 12.4 Effects of Changes to PEI's Transportation System 12.5
- 12.5 Effects of Newfoundland Railway Closure 12.5
- 12.6 Costing Analysis 12.7
- 12.7 Overall Assessment 12.9

APPENDICES:

- A - Selected Historical Data on Truck and Rail Transport - Nova Scotia
- B - Nova Scotia Economic Trends
- C - Interview Guide
- D - Detailed Results of Shipper/Receiver Survey

EXECUTIVE SUMMARY

Implications of Changes in Rail Service On Development in Nova Scotia

1.0 BACKGROUND

Over the past decade, there has been a gradual decline in the utilization of rail service in Nova Scotia relative to the use of the provincial highway system. Several factors have contributed to this, including changes in subsidy programs, equipment and technology, and the regulatory environment.

A number of uneconomic branch lines have been abandoned in recent years and it is expected the abandonment process will be hastened under the 1987 National Transportation Act. Under this legislation, it will no longer be necessary for the railways to establish an operating loss in order to apply for abandonments. As well, abandonment applications will no longer be limited to branch lines. This raises the possibility, that in addition to branch lines which have already been identified as candidates for abandonment, the future of the main lines in Nova Scotia could be in question.

As a result of the above, and other recent events holding important implications for the province's transportation system, the Province of Nova Scotia and the Government of Canada commissioned this study to examine the implications of changes in rail service on development in Nova Scotia. The study provides an analysis of relevant data and information pertaining to changes in rail transport in Nova Scotia. Study results are intended to assist the provincial and federal governments in formulating policies to deal with the impact of these changes on existing industry and their implication for industrial development.

Historical data are used to describe the recent evolution of the truck and rail modes. A major shipper/receiver survey is then used to determine the importance of rail to individual industries and the impact that changes in services would have on these industries. The effects that closure of certain lines would have on industrial development is examined, along with the implication that other transport initiatives, such as the closure of the Newfoundland Railway, may hold for Nova Scotia.

Study results are summarized below.

2.0 COMPARISON OF MODAL SHARES

Data compiled by Statistics Canada provides important indicators of the relative positions of the truck and rail transport industries in Nova Scotia.

In terms of tonnage carried, Nova Scotia's trucking industry recorded rapid increases over the past decade, primarily due to growth within the service sector of the economy, while the volume of freight moved by rail has remained relatively unchanged. Both modes of transportation have been able to reduce their rates (on a constant dollar basis), with the trucking industry achieving the greatest reductions.

Rail currently accounts for approximately 60% of tonnage moved to, from and within Nova Scotia, while trucking accounts for 60% of total revenues. This reflects the fact that trucks are more likely to move higher revenue products due to their speed, flexibility and convenience, while rail movements consist of lower revenue bulk commodities, such as coal or gypsum.

Today, trucking accounts for virtually all freight moved within the province. The exception is crude products, where truck transport still accounts for approximately one half of the market on a revenue basis. This demonstrates truck transport can be competitive with rail on short-haul bulk movements.

For freight movements to and from the province, trucking predominates in the movement of food products and end products, while accounting for one-half of the market share in fabricated materials and crude products. This means that truck and rail are successfully competing over a wide range of products and haul distances, a fact generally confirmed by the costing analysis undertaken as part of the study, and the shipper/receiver survey results.

While total rail traffic in Nova Scotia has generally remained steady over the past decade, traffic on the Truro-Sydney line has declined by 25 percent over the past 5 years while traffic on the Moncton-Halifax line has increased by a similar percentage. Closure of the Newfoundland rail service in September 1988, has further increased traffic levels on the Truro-Halifax line, while decreasing traffic on the Truro-Sydney line.

3.0 SHIPPER/RECEIVER SURVEY

A comprehensive shipper/receiver survey involving 62 respondents was conducted to determine the importance of rail service to Nova Scotia and the implications that rail line closure would have on companies using these services.

Overall, two-thirds of the companies responding did not have any major problems with rail transportation services and rates. The other third reported problems with damage, disruptions and delays in transit, slow/poor service and equipment availability.

Nearly two-thirds of the companies responding felt that direct rail service was highly important (25%), or indispensable (40%), to their operations. Very few companies must rely exclusively on rail service due to the physical characteristics of their products; most use direct rail service due to the volumes shipped or distances involved. These companies consider rail to be highly important or indispensable for their operations. Shipping lines, automotive product companies and building material supply firms indicated the greatest degree of dependence upon direct rail service and would be the firms most adversely affected by the loss of this service.

Twenty-five companies (40%) indicated they would respond to a loss of direct rail service by switching to another mode. While trucking was the mode most frequently mentioned, several companies indicated they would ship by water. Eight companies (13%) indicated they would have to undergo a change in products or markets while eleven companies (18%) indicated a major change in company logistics would be required. Eleven companies (18%) indicated they would have to move out of Nova Scotia or go out of business. These were, as one would expect, companies who rated rail services as indispensable, with most shipping products through the Port of Halifax. Six companies (10%) indicated loss of direct rail service would have no affect on their operations. One company did not respond to this question.

4.0 CLOSURE OF TRURO-SYDNEY AND EAST RIVER-HALIFAX LINES

The impact that closure of the Truro-Sydney and the East River-Halifax lines would have on current users of these lines was examined in some detail. In total, nine identified regular users would be affected. The loss of direct rail car service would require most of these companies to dramatically change their distribution patterns in order to continue operation.

The study team has considered alternatives for these nine companies:

- A short-line railway operation could serve the two companies moving coal and gypsum on Cape Breton.

- Three companies could move their products to market by water instead of rail. This would require establishing appropriate warehousing and distribution systems and increased investment in loading/receiving facilities. Overall, annual transport costs for most commodities would not be increased; however, transport cost increases could adversely affect some minor markets.

  These same companies would also experience increased costs to truck their inputs to the plant; however, these increases are small in comparison to the companies' total operations and would, in our opinion, likely be absorbed by the companies involved.

  Obtaining appropriate equipment might be a barrier for two of the companies. One company would require specialized road transport equipment, which is available in Canada. The other would require marine transport equipment, which is not readily available in Canada and could be particularly difficult to acquire.

- Four companies could switch to either truck or some form of truck/rail combination (i.e. piggyback or transhipment) for their inbound and outbound movements. Increased transport costs would result, along with partial loss of some markets. In one case, specialized equipment would be required to move the product by road. This equipment is available in Canada.

The desire and ability of each company to make the necessary changes depends to a large degree upon market conditions at the time. Provided the changes are made, there should not be any major reductions in employment levels or plant closures.

Loss of rail service between Truro and Sydney would mean that companies dependent upon direct rail car service would not consider this area as a potential location for their facilities. While the importance of direct rail car service may diminish in the future, the loss of this service does, nevertheless, mean the loss of an important regional development tool.

5.0 EFFECTS OF CHANGES TO PEI'S TRANSPORTATION SYSTEM

Two major changes to PEI's transportation system are currently being considered. One is the construction of a fixed link between PEI and the mainland. The second is the impending closure of direct rail service between the mainland and the province. The implications these potential changes hold for Nova Scotia's road and rail systems were reviewed.

A study by Public Works Canada determined that the fixed link would result in minor savings in construction and maintenance costs for Nova Scotia's road system. These savings would occur mainly on the highway from Truro to Caribou where traffic to the existing ferry was predicted to decrease with the fixed link in place.

Due to the limited quantities of goods moving by rail between Nova Scotia and PEI, loss of direct rail service between PEI and the mainline would have little effect on Nova Scotia. Using 1984 rail traffic data (the latest available), it was determined that 80 additional one-way truck movements per year would occur between the two provinces with rail line closure. The impact of this traffic on roadway capacity and pavement life would be negligible.

6.0 EFFECTS OF NEWFOUNDLAND RAILWAY CLOSURE

On September 30, 1988, the Newfoundland Railway service was discontinued; CN's freight movements were replaced by marine and highway transport, with shipping rates determined on the basis of the Terms of Union. This change followed an agreement between the Province of Newfoundland and the Government of Canada, dated June 20, 1988. This has changed the dynamics of freight movements to Newfoundland.

Although rates on rail freight shipments to Newfoundland will continue to be calculated on the basis of the Terms of Union, many route and mode alternatives exist for Newfoundland traffic. These include, for example, container service from either Montreal or Halifax to Corner Brook and St. John's. In this new environment, the routing of traffic will depend on the total transportation costs and the physical distribution logistics associated with container and trailer movements. Available alternate routings are expected to attract as much as 70% of the Newfoundland rail traffic previously moving over North Sydney.

This shift is substantially complete and will seriously jeopardize the economics of the Truro-Sydney line. Provided the bulk of this shift continues to move by rail through Halifax, the economic position of the Truro-Halifax line will be significantly improved, offsetting approximately two-thirds of the rate increase suggested by the loss of other rail freight traffic from the Truro to Sydney line.

7.0 COSTING ANALYSIS

Railway costing analysis was undertaken for traffic moving over the Truro-Sydney line using the consultants' rail costing model and the shipper survey results. The analysis included traffic originating and terminating on the line, bridge traffic to and from Newfoundland, and VIA service in Nova Scotia. The purpose of the analysis was to identify the revenue and, to the extent possible, the cost implications for the remaining shippers.

Overall, it is our assessment that rail freight rates for traffic originating and terminating on the Truro-Sydney line are compensatory, meeting the regulatory requirements imposed on the railways. In addition, the costing analyses indicate the shippers are providing modest contributions to CN's constant costs.

Given the economic conditions of the region, and the costs of overcoming distance both in assembling industrial inputs and accessing markets for outputs, these results are reasonable. These conclusions tend to support claims by CN that freight rates in the Atlantic region are not particularly remunerative.

The results are significant to the region for two reasons. First, the lower freight densities achieved on lines in the Maritimes means each shipment bears a greater responsibility to ensure the freight rate supports the operation and maintenance of the line. Therefore, shippers as a whole may be subject to higher freight rates than if they were operating in a region with denser rail traffic patterns. Second, each individual shipper bears a significantly larger responsibility for ensuring that traffic levels are sustained to assure the ongoing operation of the line in an economically feasible manner. In such circumstances, loss of even minor portions of the total traffic becomes significant.

It is estimated that closing the Truro-Sydney line would represent a net revenue loss to CN of $6.6 million. In addition, payment by VIA to CN (which would disappear if the VIA service in Nova Scotia was discontinued) includes an estimated $2.3 million[1] of cost reimbursement, which could not be avoided by CN in the short term. CN would therefore attempt to offset both of these losses with higher tariffs, at least in the short term.

Represented as a percentage for the Atlantic Region, the CN freight rate increases required to offset the revenue decrease of $6.6 million from the loss of rail freight is 5.2%. A further 1.5% increase would be required to offset the loss of VIA service in Nova Scotia.[2] The total freight rate increase required would therefore be approximately 6.7%.

Other traffic on the Truro-Sydney line includes rail traffic to and from Newfoundland. The consultants have estimated that the re-routing of this traffic over Halifax could offset the 6.7% increase by at least two-thirds. The net increase to CN shippers in the Atlantic Region would therefore be lowered to approximately 2%. This increase could, however, be distributed over all CN's clients and not just those in the Atlantic Region.

8.0 OVERALL ASSESSMENT

Truck traffic in Nova Scotia has increased rapidly in recent years due primarily to the growth in the economy's service sector, which is more economically and efficiently served by truck transport. Comparison of truck and rail rates through the consultant's costing models confirmed these modes are competitive over a considerable range of commodities and distances. The marine mode is also competitive with rail for a number of products.

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[1] This is the amount accruing from all VIA services in Nova Scotia. The Halifax-Sydney service represents about 45% of this amount.

[2] Should only VIA service from Halifax to Sydney be closed, the resultant increase would be 0.7% instead of 1.5%.

Nevertheless, direct rail car service is considered to be highly important or indispensable to the majority of its users. This service is absolutely vital to the movement of containers and other products through the Port of Halifax to and from central Canada.

The effects of closing the Truro-Sydney line were investigated in some detail. While contributing to constant costs, the line is not particularly remunerative to CN due primarily to its traffic density. Any further decreases in traffic volumes on this line would significantly decrease these contributions and reduce the economic viability of the line. Should this line be closed, existing users would be required to successfully make dramatic changes in their distribution patterns in order to continue operations. As well, investment in shipping/receiving facilities would be required and product mixes altered. Some loss of markets could also result. In addition, an important regional development tool would be lost.

Loss of the Truro-Sydney line and VIA Rail service in Nova Scotia would increase pressure to raise rates elsewhere in CN's system to recover the lost revenues. If these lost revenues are to be gained from Atlantic Region shippers only, tariff increases of approximately 6.7% are required to offset these losses. Given the competitive nature of much of this traffic, such an increase would not be possible without further traffic switching from rail. The traffic that could not economically switch to another mode would therefore be subject to rate increases greater than 6.7%.

While the determination and detailed investigation of the consequences of such an increase are beyond the Terms of Reference for this study, it is our opinion that much of the traffic on this line could not sustain such increases. This would result in market losses and reduced economic development potential for Nova Scotia. However, rerouting of the Newfoundland traffic over Halifax, combined with improved efficiencies resulting from the traffic increase on the rail line to Halifax, could offset the above increases by approximately two-thirds. The net increase to CN shippers in the Atlantic Region would therefore be in the order of 2% which is approximately one-half of the annual rate increases experienced in recent years, and is therefore not considered a significant increase.

1.0 BACKGROUND

Over the past number of years, there has been a gradual decline in the utilization of rail service in Nova Scotia relative to the use of the provincial highway system. Several factors have contributed to this situation:

a. extension of freight subsidy programs to highway transport in 1969.

b. upgrading of the highway system and an associated increase in truck lengths and allowable weight limits on the highways during the 1970s and 1980s.

c. changes in handling methods and facilities by shippers and receivers.

d. advancement in equipment and technology in the trucking industry.

e. regulatory reform affecting the trucking industry.

f. reduction in the level of service provided by Canadian National on branch lines.

g. deliberate strategies employed by Canadian National in recent years to divert freight traffic from rail carload to its intermodal service.

Since 1983, the following subdivisions have been abandoned:

1. Yarmouth: (136 miles between Yarmouth and Liverpool)

2. Middleton: (67 miles between Bridgewater Junction and Bridgetown)

3. Truro: (54 miles between Mantua and Truro consisting of CP and DAR trackage)

At the present time, all applications to the CTC for rail abandonments in Nova Scotia have been authorized. The most recent abandonment order was on the Hopewell (Thorburn Spur) Subdivision (6 miles) that occurred in December 1987. In 1986, the five-year review of the service retention order on the Inverness Subdivision resulted in the order to abandon that rail operation in July 1986. As a result, there are no upcoming reviews respecting previous orders, and future abandonment applications will provide the focus of the rail rationalization process in Nova Scotia.

In May 1987, the Atlantic Provinces Transportation Commission (APTC) completed a study which makes it apparent that major portions of rail track in Nova Scotia are potential candidates for abandonment in the near future. In fact, 290 miles of rail lines, representing 39 percent of existing Nova Scotia track, are expected to be subject to abandonment application in the next three years. The main lines between Moncton and Halifax, and Truro and Sydney were not studied because CN Rail indicated they were not candidates for abandonment.

As noted above, a number of uneconomic branch lines have been abandoned in recent years, but it can be expected that this abandonment process will be hastened by the regulatory environment under the 1987 National Transportation Act. Under the new legislation, it will no longer be necessary for the railways to establish an operating loss in order to apply for abandonment. Furthermore, abandonment applications will no longer be limited to branch lines but will include all railway lines. This raises the possibility that, in addition to those branch lines which have already been identified as candidates for abandonment, the future of the main lines in Nova Scotia could be in question.

Other recent events that have important implications for the province's transportation system include:

a. harmonization of heavy vehicle weight and dimensions regulations across Canada.

b. Scott Paper's decision to ship by water from Sheet Harbour as opposed to rail which, if implemented, will have a definite effect on traffic volumes on the Hopewell Subdivision[1].

c. introduction of the CN Toronto/Montreal-Moncton Laser Train Service.

As a result of the above factors, the Province of Nova Scotia and the Government of Canada commissioned this study to examine the implications of changes in rail service on development in Nova Scotia.

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[1] At the time this report was being sent to the printers, Scott Paper confirmed that it was switching some of its existing U.S. destined shipments from the rail to the marine mode.

2.0 OBJECTIVE AND SCOPE

2.1 OBJECTIVE

This study provides an analysis of relevant data and information pertaining to changes in Nova Scotia rail transport in both the short term (five years) and in the long term (ten years). The resulting analysis will be used to assist the provincial and federal governments in formulating policies to deal with the impact of these changes on existing industry and the implications for industrial development.

2.2 SCOPE

The scope of the study as outlined in the Terms of Reference includes:

1. determining the relative importance of rail service to individual industries in maintaining continuity with their markets and customers.

2. examining service levels of the rail line between Moncton-Halifax, Halifax-East River, and Truro-Sydney, taking into account:

   - current and projected traffic
   - recent decisions by customers to shift from rail
   - changes in road transport vehicle weights and dimensions
   - closure of the Newfoundland Railway in September 1988
   - the introduction by CN in 1987 of its Toronto/Montreal-Moncton Laser train
   - the expanded service, by ASL Atlantic Searoute in January 1988, from Halifax to St. John's with the addition of a Corner Brook port of call
   - implications arising from the possible discontinuation of VIA Rail service.

3. Taking into account the findings from 1. and 2. above, determining the impact on business and on development opportunities if a portion or all of a) the Cape Breton line (i.e., Hopewell and Sydney Subdivisions) and/or b) the Halifax-East River line is abandoned.

4. Taking into account the findings from 1. and 2. above, determining the impact on the remaining portions of the line and on the main Moncton to Halifax line if any portion of the Halifax-East River or Cape Breton line is abandoned.

5. Determining the extent of the increase in truck traffic volumes on the Nova Scotia highway system if a portion of any line is abandoned.

6. Determining the significance of locating an intermodal (piggyback) terminal in the Halifax area and indicating the effect this would have on the Moncton-Halifax line.

7. Determining whether the proposed fixed crossing to PEI will have an impact on the Nova Scotia road and rail systems and, if so, to what extent.

8. In connection with Newfoundland rail service, and because of its impact on Nova Scotia rail lines, the study is also to:

   - assume that the Terms of Union did not apply, and determine the options open for CN Rail to retain or expand service to Newfoundland in the face of increased competition from other modes, and identify which option best contributes to the viability of the Nova Scotia rail system.

- determine the significance of a change in Newfoundland rail service with respect to costs to Nova Scotia shippers.

Exhibit 2.1 illustrates the rail study network.

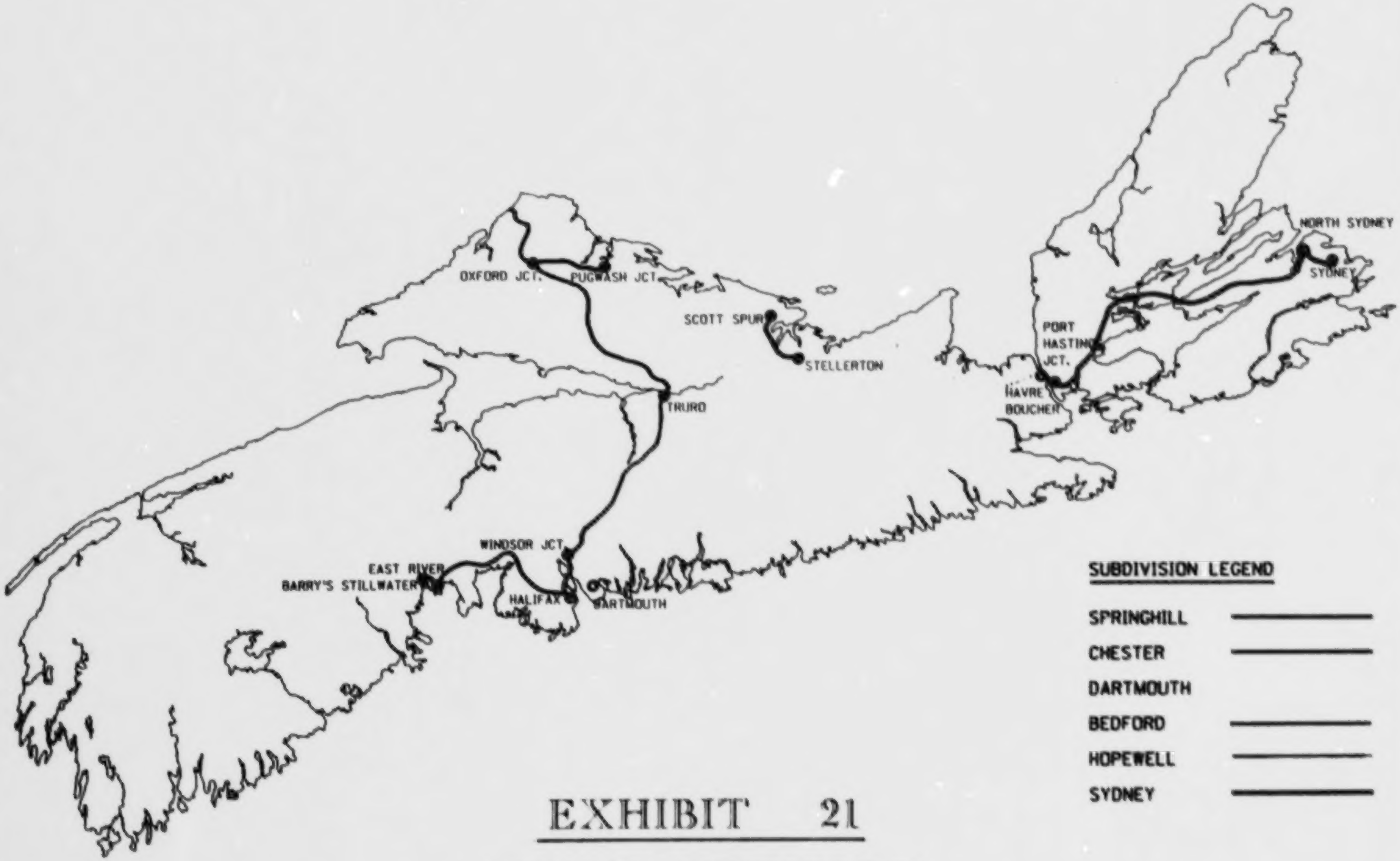
OXFORD JCT.
PUGWASH JCT.
SCOTT SPUR
STELLERTON
TRURO
PORT HASTINGS JCT.
HAVRE BOUCHER
NORTH SYDNEY
SYDNEY
WINDSOR JCT.
EAST RIVER
BARRY'S STILLWATER
HALIFAX
DARTMOUTH
SUBDIVISION LEGEND
SPRINGHILL
CHESTER
DARTMOUTH
BEDFORD
HOPEWELL
SYDNEY

EXHIBIT 21

STUDY NETWORK BY SUBDIVISION

3.0 GENERAL APPROACH AND METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the approach and methodology used by the consultants. The methodology consists of developing historical data and information on freight movements to, from, and within the study area to provide a basis for analysis and impact assessment. Information sources used include Statistics Canada data on rail, truck and water freight transport and CN Rail. Relevant reports include, as examples, the Atlantic Provinces Transportation Commission (APTC) study "Impact of Rail Line Abandonment in the Maritimes," and the Peat Marwick "Halifax Load Centre Cost Analysis."

From this information base, a description of how the modes have evolved to their present state is developed. To determine the relative importance of rail services to individual industries and the impact of changes to this service, an extensive survey of businesses that use, or recently used, rail services was undertaken. This shipper/receiver survey included the major rail users, with a smaller sample of minor users. The transportation decision-makers of these firms were asked to rate the importance of the alternate modes of transport to their operations, identify the reasons why they use each mode, identify products and volumes shipped by mode, rates, transport price sensitivity, and implications for their operations, should certain lines be closed.

The survey used mail-out questionnaires followed by telephone interviews. For key companies and agencies, face-to-face interviews were conducted. In total, 62 companies and/or individuals were interviewed.

The survey and interview results are used in conjunction with the available historical data to estimate the impact certain rail line closures would have on business and economic development in the province. Where required, the consultant team used proven rail, truck, and marine costing models to supplement and refine the results of the shipper/receiver survey.

Two data limitations experienced by this study are of note. The first concerns rail data as had been published by Statistics Canada for 1984 and earlier. The post-1984 rail origin-destination databases are undergoing processing at the National Transportation Agency (NTA) for publication at a later date. Generally comparable data for the trucking industry are available to 1986. Secondly, because of the opportunities now available as a result of regulatory reform, the use of confidential contracts between the railways and their customers is becoming more frequent. As a result, rail rate information was often withheld by shippers, as such data are sensitive to their operations.

The following sections of this report describe the analysis performed, survey results and study findings.

4.0 MODAL EVOLUTION PATTERNS

4.1 INTRODUCTION

This chapter presents an historical review of the trucking and rail industries in Nova Scotia for the last decade. Data compiled by Statistics Canada is used to present total provincial figures in three categories: to, from, and within Nova Scotia. Relevant data are exhibited in Appendix A.

Overall, the volume of freight moved by truck has increased rapidly during the past ten years, primarily due to growth within the service sector of the provincial economy, while rail transport has remained relatively unchanged. Both modes of transport have been able to reduce their rates per tonne transported (on a constant dollar basis), although trucking has achieved the greatest reductions.

4.2 RAIL TRANSPORT

4.2.1 Total Tonnage and Revenues

From 1976 to 1984, total rail freight movement in Nova Scotia increased 19 percent, from 6.67 million tonnes to 7.95 million tonnes. (Refer to Appendix A-1.) These traffic levels are comprised of the following components:

- Tonnage moved within Nova Scotia accounts for half of the total provincial freight movement. While 1976 and 1984 within-province totals are similar, there were significant fluctuations in the intervening years.
- Tonnage moved from Nova Scotia rose from 1.2 million tonnes to 2.4 million tonnes between 1976 and 1984, a 97 percent increase, which can be largely attributed to increased container traffic through the Port of Halifax.
- Traffic to Nova Scotia increased by only 8 percent, from 1.3 to 1.4 million tonnes.

Total rail freight revenues for Nova Scotia stood at nearly $153 million in 1984, compared to $87 million in 1976--an increase of almost 75 percent. (Refer to Appendix A-2.) The following is a breakdown of total revenues by category:

- Within-province movements account for only 8 percent of total revenues. These revenues primarily come from moving gypsum and coal.
- From-province movements account for 31 percent of total revenues. Traffic through the Port of Halifax account for most of these revenues.
- To-province movements account for the remaining 61 percent of revenues. Again, Port of Halifax traffic accounts for the largest portion of these revenues.

In constant dollar terms (as measured by the Consumer Price Index), rail revenues actually decreased by 10 percent between 1976 and 1984. At the same time, tonnage transported was increasing, resulting in the following changes:

- Within-province revenue per tonne decreased by 22 percent.
- From-province revenue per tonne decreased by 53 percent.
- To-province revenue per tonne decreased by 16 percent.

Available data does not allow one to determine the extent to which these decreases are due to rate reductions versus changes in product mix and haul distances.

4.2.2 Tonnage and Revenue by Commodity Group

Four major commodity groups are categorized by Statistics Canada: food, feed and beverage; crude materials; fabricated materials; and end products. Rail tonnage moved for each of these commodity groups to, from, and within Nova Scotia is summarized as follows (refer to Exhibit A-3):

- Crude products account for virtually all (97 percent) of within-province movements.
- Crude products also account for the majority (68 percent) of from-province movements, with fabricated materials accounting for another 25 percent.
- Food, feed and beverage, and fabricated materials share most of the to-province movements (49 percent and 44 percent, respectively).

Rail revenue totals for 1976 to 1984 are similar to tonnage totals for each of the three categories:

- Crude products for 90 percent of within-province revenues.
- Fabricated materials and end products together account for more than 90 percent of the from-province revenues.
- Food, feed and beverage, fabricated materials, and end products all account for a large share of the to-province revenues, with fabricated materials being the largest.

The relative size of each commodity group was calculated on both a revenue and tonnage basis for 1976 to 1984. (Refer to Appendix A-5.) Crude materials was the only commodity group to show an increase (5 percent) in percentage share of total tonnage moved, while the three other commodity groups have decreased shares. However, in terms of revenue, crude materials had less than a 1 percent increase share. Therefore, transport of crude materials generates lower revenues per tonne than the other major commodity groups. This is attributed to the bulk nature of crude materials (primary gypsum and coal) and their shorter haul distances. The shift in market share also indicates crude materials has been the best traffic growth area for rail in terms of tonnes transported.

4.2.3 Traffic Levels by Line

Appendix A-6 shows changes in traffic levels for each CN Rail subdivision in Nova Scotia relative to 1983. Traffic on the Truro to Sydney line (Sydney and Hopewell Subdivisions) decreased by approximately 25 percent since 1983, while traffic from New Brunswick to Halifax (Springhill and Bedford Subdivisions) increased by an average of 18 percent. The traffic growth on the New Brunswick to Halifax line reflects increased movements through the Port of Halifax.

4.3 TRUCK TRANSPORT

For the purposes of comparing trucking statistics to rail statistics, figures for the for-hire trucking industry were used due to lack of data on private trucking. Available private trucking statistics are noted in Section 4.3.3.

4.3.1 Total Tonnage and Revenue

Total tonnes of freight moved by truck in Nova Scotia increased by 79 percent between 1976 to 1986 from 3.5 million tonnes to 6.4 million tonnes. (Refer to Appendix A-7.) The increases by components were:

- Within-Nova Scotia tonnages increased 65 percent.
- From-Nova Scotia tonnages increased 111 percent.
- To-Nova Scotia tonnages increased 100 percent.

While total freight transported by truck increased by 79 percent, revenues earned increased by 63 percent when expressed in current year dollars. (Refer to Appendix A-8.) Increases by component were as follows:

- Within-Nova Scotia revenues increased 58 percent.
- From-Nova Scotia revenues increased 65 percent.
- To-Nova Scotia revenues increased 31 percent.

When considered in constant dollar terms, revenue per tonne declined by 36 percent to 54 percent, depending upon the movement. These decreases are greater than those for rail (16 percent to 53 percent). Available data does not allow a determination to what extent these decreases are affected by changes in commodities and haul distance as opposed to rate decreases (in real terms).

4.3.2 Tonnage and Revenue by Major Commodity Group

The relative share of each major commodity group* transported by truck was analyzed using special tabulations from the 1986 Statistics Canada For-Hire Trucking Survey. (Refer to Appendix A-9.) The relative size of each commodity group, on a tonnage basis, was as follows:

From movements	
. end products	13.1 percent
. crude materials	13.6 percent
. fabricated materials	48.7 percent
. food, feed, beverage	24.7 percent

To movements	
. end products	20.0 percent
. crude materials	4.8 percent
. fabricated materials	40.1 percent
. food, feed, beverage	35.1 percent

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*These commodity groups are the same as presented earlier for rail.

Within movements

. end products	8.2 percent
. crude materials	40.4 percent
. fabricated materials	36.0 percent
. food, feed, beverage	15.3 percent

Overall, fabricated materials accounts for the largest share of products moved by truck, on a tonnage basis, followed by food, feed and beverage. However, on a within-province basis, the largest share is held by crude materials.

On a revenue basis, end products accounted for the largest share of movements to and from Nova Scotia. End products also accounts for a disproportionate share of revenues on within-province movements. This larger share indicates the higher revenues obtained for transporting this commodity group.

4.3.3 Trucking Revenues by Province

Appendix A-10 compares trucking revenues between 1981 and 1986 by province for movements to and from Nova Scotia. Revenue has increased proportionately for all major interprovincial movements during this time, indicating consistent growth across all market segments. New Brunswick, Quebec and Ontario account for the majority of revenues earned on truck movements to and from Nova Scotia. Nova Scotia earns the most (30 percent) revenue from shipments to New Brunswick, followed by shipments to Ontario (24 percent) and Quebec (14 percent). Ontario accounts for the largest share of shipments to Nova Scotia (37 percent), followed by New Brunswick (27 percent) and Quebec (25 percent).

4.3.4 Private Trucking Industry

Private trucking is an important segment of the trucking industry; however, by definition, there are no revenues associated with private trucking, and historical trends associated with freight movements are not available. Available data show private trucking accounting for approximately 45 percent of total freight moved by truck within Nova Scotia, and 20 percent of movements to and from the province. (Refer to Appendix A-11.) This industry mainly involves movements within the province and to and from the other Atlantic Provinces. The movements to Ontario and Quebec are insignificant compared to for-hire trucking.

4.4 MODAL SPLIT

4.4.1 Tonnage and Revenue

There has been rapid growth in Nova Scotia's trucking industry over the last decade, with a 79 percent increase in tonnes transported. In comparison, tonnage moved by rail increased by 19 percent. As a result, trucking has improved its market share in recent years as illustrated by Exhibit 4.1. In 1976, trucking accounted for only 35 percent of the total truck-rail traffic, but by 1984 this figure had increased to 41 percent. In terms of revenue, the market share for trucking increased from 52 percent in 1976 to 59 percent in 1984--a 7 percent increase.

4.4.2 Modal Split by Major Commodity Group

Exhibit 4.2 shows the relative market share of trucking versus rail for the major commodity groups. Trucking predominates the movement of products within the province, except for crude materials, where it still accounts for over one-half of

EXHIBIT 4.1

MODAL SHARE OF FREIGHT TRAFFIC - NOVA SCOTIA

		For-Hire Truck-Rail Mode Split			
Year		Within	To	From	Total
1976	(tonnage)	36:64	33:67	30:70	35:65
	(revenue)	76:24	46:54	47:53	52:48
1978	(tonnage)	32:68	34:66	29:71	32:68
	(revenue)	75:25	45:55	46:54	51:49
1980	(tonnage)	52:48	42:58	33:77	42:58
	(revenue)	84:16	50:50	49:51	57:43
1982	(tonnage)	54:46	48:52	29:71	46:54
	(revenue)	83:17	59:41	58:42	63:37
1984	(tonnage)	47:53	43:57	36:74	41:59
	(revenue)	82:18	54:46	52:48	59:41

EXHIBIT 4.2

MODAL SPLIT BY COMMODITY GROUP FOR-HIRE TRUCK VS. RAIL - NOVA SCOTIA

		Within	To	From
Food, Feed, Beverage	(revenues)	99:1	57:43	92:8
	(tonnes)	99:1	46:54	92:8
Crude Products, Inedible	(revenues)	54:46	52:48	40:60
	(tonnes)	28:72	54:46	8:92
Fabricated Products, Inedible	(revenues)	95:5	54:46	43:57
	(tonnes)	94:6	52:48	48:52
End Products, Inedible	(revenues)	99:1	74:26	70:30
	(tonnes)	99:1	69:31	69:31

NOTE: Rail data are for 1984, while truck data are for 1986. Rail data for 1986 are not available, nor are truck data available by commodity group for 1984; 1986 data prepared by Statistics Canada for this study by special request.

revenues. On a revenue basis, truck and rail essentially share the market on movements to and from the province, except for food, feed and beverage.

The mode shares noted above show truck and rail are competitive over a wide range of products for movements to and from the province. Truck can also be competitive with rail in moving crude materials over shorter distances. This conclusion is supported by the costing analysis and the shipper/receiver survey undertaken as part of this study.

For both crude products and fabricated materials, truck and rail, on a revenue basis, each have approximately one-half the market on movements to and from Nova Scotia. Truck has the largest share of end products on both to and from Nova Scotia movements.

4.5 SUMMARY

For-hire trucking activity in Nova Scotia has increased by approximately 79 percent in terms of tonnage over the past decade, while rail activity increased by 19 percent. As a result, trucking has increased its share of the market by approximately 6 percentage points. The major area of activity increase for rail movements in recent years has been in the movement of containers through the Port of Halifax.

Trucking dominates the movement of freight within the Maritimes, except for bulk commodities such as coal and gypsum. However, in recent years trucking has made some gains in transporting even these commodities over shorter haul distances. Trucking also dominates the movement of end products, which tend to be time-sensitive and generate higher revenues per tonne than the other commodity groups.

Both rail and trucking have reduced their revenues per tonne carried in recent years, although the rate of decrease for trucks has been greater. This, in part, reflects increases in maximum allowable vehicle weights for trucks, which have allowed them to reduce their costs. The gains made by truck relative to rail have allowed an increase in the considerable range of distances and goods over which truck and rail compete for traffic.

A review of recent growth in the provincial economy (Appendix B) shows the major growth has occurred in the service sector, which has a demand for end products that typically move by truck. Largely as a result of capturing this new traffic, trucking has increased its market share. As the service sector is expected to continue to be the major growth area in the economy, the truck mode should continue to increase its overall market share.

Compared to the trucking industry, railway activity is more closely related to the performance of the natural resource sector--in particular, mining and forestry. This sector of the economy is not expected to grow rapidly during the next few years and, hence, neither is rail transport. The transport of containers through the Port of Halifax is expected to continue as a growth area for rail traffic.

5.0 PROFILES OF RAIL-ORIENTED COMMODITIES

5.1 INTRODUCTION

This chapter provides an overview of the three major commodities traditionally moved by rail within Nova Scotia. These are coal, gypsum and containers. Volumes currently being transported by rail are identified with possible future changes in production levels and locations in the case of coal and gypsum, and future traffic levels in the case of containers. Options for transport by other than rail are examined.

5.2 COAL

5.2.1 Current Shipments

Nova Scotia has had an historical tie to coal. Coal has served as an energy source for electrical generation, space heating and industrial process heating. Nova Scotia mines, producing thermal and metallurgical coal for domestic and offshore markets, have provided long-term employment and business opportunities for several regions of the province, particularly for Cape Breton.

Nova Scotia Power Corporation generates most of its electrical energy with coal-fired thermal plants. On an annual basis, N.S.P.C. consumes approximately 2.5 million tonnes of coal. Various Nova Scotia coal mines (principally Devco) serve this market.

The second market for Nova Scotia coal is the export market. Currently, Devco is the only producer exporting coal. Exhibit 5.1 summarizes the major Nova Scotia coal shipments.

EXHIBIT 5.1

MAJOR COAL SHIPMENTS IN NOVA SCOTIA

From	To	Transport Mode	Annual Volume (tonnes)
Victoria Jct.	N.S.P.C. Lingan	Devco Rail	1,600,000
Victoria Jct.	N.S.P.C. Glace Bay	Devco Rail	100,000
Victoria Jct.	Whitney Pier for export (Sydney)	Devco Rail	1,500,000
Victoria Jct.	N.S.P.C. Trenton	CN Rail	300,000
Victoria Jct.	N.S.P.C. Point Tupper	CN Rail (Devco cars)	250,000
Pictou	N.S.P.C. Maccan	Truck	8,000
Pictou	N.S.P.C. Trenton	Truck	100,000

Source: Personal Interview

In terms of CN Rail traffic, the significant movements are the 250,000 tonnes from Devco to Pt. Tupper and the 300,000 tonnes from Devco to Trenton. Devco and CN have negotiated three-year confidential contracts for these two movements. Devco supplies its own coal cars for the Pt. Tupper haul, whereas CN supplies the equipment for the Trenton haul.

5.2.2 Future Developments

N.S.P.C. is in the process of expanding its coal-fired generation capacity. It recently converted its Pt. Tupper station from oil to coal. It is also doubling its generation capacity at Trenton. In addition, N.S.P.C. is pursuing export markets for electricity. To do this, it will need to expand further and is considering adding capacity at Pt. Tupper and/or building a new facility at Sheet Harbour.

In terms of coal supply, Devco has capacity available in its system to expand production and is also stockpiling coal at its Victoria Junction facility. A 1 million tonne/year mine near Stellarton, N.S. is also being planned. This mine would supply N.S.P.C. Trenton plant with 700,000 tonnes/year starting in 1991, replacing Devco as the source of supply. The remaining production from this new mine, i.e., 300,000 tonnes, would most likely be marketed in eastern Canada or the U.S.

5.2.3 Transportation Requirements

The transportation requirements for the N.S. coal industry are currently being met by rail, truck and water modes. However, the choice of modes for each movement is based on its particular circumstances. In general, coal is a low-value, high-volume commodity best suited to marine or rail transport.

Offshore export markets are served by bulk ocean-going vessels. Devco, the only major exporter, uses its own railway to move its coal to the Port of Sydney where it is loaded on ships. This is the only real option for coal exports. However, it should be noted that lack of depth of the harbour and lack of port storage result in some losses of efficiency. The Port of Sydney is limited to 30,000-tonne vessels, and Devco must load ships from coal stockpiles located at Victoria Junction (8 km away), as it is not permitted to stockpile coal at the port.

Devco employs rail transport for all its domestic coal movements (with the exception of the transportation of the raw coal from Prince Mine to the coal preparation plant) due to the large tonnages. Its own railway transports the coal from its two large mines (Lingan and Phalen - annual production 1.6 and 1.2 million tonnes, respectively) to its coal preparation plant. The coal is washed and blended for delivery to the market. The prepared coal is shipped by Devco Railway to Lingan power plant (12 km) and Glace Bay power plant (16 km). Devco coal for Trenton (279 km) and Pt. Tupper (168 km) is transported by CN Rail.

The collection and delivery of coal in the Sydney area is best suited to the Devco Railway. Rail provides the capacity and flexibility required and, given the volumes (3.8 million tonnes into the coal preparation plant and 3.8 million tonnes out), truck transportation would be impractical.

Coal transportation to Pt. Tupper, Trenton, and, in the future, Sheet Harbour could move by barge. However, for this to take place, additional handling and storage facilities would have to be installed at both the shipping and receiving end.

Truck transportation has a role in coal transportation and may play a larger role in the future. Truck transport is used to transport the production from Devco's Prince mine (1 million tonnes per annum). Truck transport was chosen, as the mine's expected life is short, and it was not considered economical to invest in new trackage and equipment. Truck transport was used as an interim measure to haul coal from Devco to Pt. Tupper until the rail system was in place. Small volumes of coal are trucked from a coal mine in Pictou to Trenton and Maccan generating plants. For these operations, rail transportation is not available from gate to gate, and the volume of traffic does not warrant the rail investment.

5.3 GYPSUM

5.3.1 Current Shipments

Nova Scotia accounts for approximately 70 percent of the Canadian production of gypsum. 1987 production was in excess of 6 million tonnes out of the Canadian total of 8.8 million tonnes.

Nova Scotia has four major gypsum producers. They are:

Fundy Gypsum Company - Wentworth and Miller Creek
Georgia Pacific Corp. - River Denys and Sugar Camp
Little Narrows Gypsum - Little Narrows
National Gypsum Ltd. - Milford

Nova Scotia gypsum is primarily shipped to wallboard plants located on the eastern coast of the U.S. The low value of gypsum dictates that the cheapest means of transportation be employed. Thus, the marine mode is employed where possible.

While Little Narrows Gypsum is located on tide water, the other producers require inland transportation. For the most part, this is by rail.

National Gypsum ships 3.0 million tonnes annually from its Milford quarry 65 kilometres by CN Rail to its Dartmouth marine loadout facility.

Fundy Gypsum ships 1.5 million tonnes annually from its Wentworth and Miller Creek production 16 kilometres by CP Rail to Hantsport.

Georgia Pacific ships 500,000 tonnes from its River Denys quarry 30 kilometres by CN Rail to Pt. Tupper. It also trucks 500,000 tonnes from its new Sugar Camp quarry located 10 miles from Pt. Tupper.

5.3.2 Transportation Requirements

Gypsum is a classic example of a low-value bulk commodity. The mining of gypsum and the manufacturing of wallboard is dictated by the market location and available transportation. Gypsum and wallboard cannot generally withstand the costs of long-haul transportation. For this reason, gypsum mines and wallboard plants are located as close as possible to the market. Nova Scotia is blessed with high-quality gypsum deposits located at or close to tide water, allowing Nova Scotia to supply the eastern U.S. wallboard plants. The small local markets, U.S. import duties, and higher cost of wallboard transporation, however, have all worked against the establishment of a wallboard plant in Nova Scotia.

The rail service provided to the three inland gypsum mines is extremely important. Without the rail service, it is anticipated that transportation costs would increase (operators indicated that even small increases in costs are critical) and, given the volumes of production (up to 3 million tonnes for National Gypsum), the switch to truck would have significant operational impacts as well as impacts on the existing road infrastructure.

5.3.3 Transportation Alternatives

Georgia Pacific recently opened its Sugar Camp quarry 16 kilometres from its marine terminal. It chose to build a heavy haul road instead of a rail spur line. According to Georgia Pacific officials, the tradeoff was between lower transportation cost of rail versus lower start-up capital cost of trucking. In addition, trucking provided more control in that the shipper is not captive to one carrier. Georgia Pacific readily admits that unit train rail service is much better suited to its needs than truck transportation. However, it does demonstrate that gypsum can be economically trucked short distances, provided the road infrastructure is available.

In the event rail lines presently being used by gypsum shippers become candidates for abandonment, it may be feasible for the shipper to assume the operation of the rail line.

5.4 HALIFAX CONTAINER TRAFFIC

5.4.1 Current Shipments

The Port of Halifax has traditionally served as the major port for Atlantic Canada, as well as providing Ontario and Quebec with a year-round port. Halifax has responded positively to the recent technological, economic and trade pattern developments to the point that the port has expanded its services and markets.

Today the Port of Halifax offers competitive container port service, thanks to its investment in port facilities and efficient inland transportation service provided by CN Rail.

Halifax is in direct competition with northeastern U.S. ports for Ontario and Quebec traffic. All of the international container lines that call at Halifax also call at one of the competing U.S. ports. To retain its share, Halifax must remain competitive in terms of cost and service.

CN Rail is the dominant carrier for the inland movement of containers to and from the Port of Halifax. Rail accounts for 85 percent of all containers moving through the Port of Halifax and close to 100 percent of the central Canada traffic. The remaining 15 percent of port traffic usually has an Atlantic Canada origin or destination. This traffic is primarily handled by truck (with a very small volume moving by water).

The Port of Halifax accounts for approximately 2.5 million tonnes of rail traffic on the CN mainline between Halifax and Montreal. To accommodate this volume of traffic, and to provide the required level of service, CN operates a minimum of two unit trains per day between the Port of Halifax and central Canada.

For Ontario and Quebec traffic, inland transportation costs account for 70 percent of the cost of using the Port of Halifax. Thus, the present cost-competitive advantage that the Port of Halifax has over its U.S. competitors is extremely sensitive to CN Rail costs. This position is generally supported by recent analyses on the cost comparisons of New York versus Halifax conducted by IBI Group. However, IBI suggested that Halifax has a definite cost advantage over New York for the Central Canada traffic. IBI determined that although a 13 percent increase in rail rates would decrease the competitive cost advantage of the Port of Halifax over New York, Halifax would continue to retain a cost advantage (see IBI Group, "Economic Issues Related to the Proposed Changes in Vehicle Weights and Dimensions Regulations for Interprovincial Trucking," December 1987).

5.4.2 Port of Halifax Traffic Projections

A total of 16.2 million tonnes of goods were shipped through the Port of Halifax in 1988. The majority of this traffic (75 percent) is bulk cargo such as gypsum, crude oil, and grain. Break bulk and roll-on, roll-off cargo accounts for 3.5 percent, and containers account for 21.5 percent. Overall, the port is expecting modest growth in total traffic. 1989 total traffic is expected to be 17.5 million tonnes; and 1990, 17.9 million tonnes. However, container traffic accounts for most of the growth. Following declines in traffic during the period 1979-1982, container traffic has grown rapidly. The 1982 level of 1.5 million tonnes has grown to 2.8 million tonnes in 1987, with forecasts of 3.5 million tonnes for 1988, 4.4 million tonnes in 1989 and 4.6 million tonnes in 1990.

This rapid growth in container traffic bodes well for CN Rail, as 75 percent of all container traffic either originates or is destined for central Canada, whereas the bulk cargo originates or is destined for points within the immediate area of Halifax.

5.4.3 Alternatives to Rail

Trucks provide land transportation links with the Port of Halifax for most shippers and receivers located in Nova Scotia, PEI and New Brunswick and occasionally for northeast U.S. and eastern Quebec. This falls in line with the results of our shipper surveys (refer to Chapter 6) which indicate little freight moves within the Atlantic Provinces by rail except for bulk commodities. Trucks also move containers between central Canada and Halifax, but usually on an emergency or occasional basis.

Trucking firms continually express interest in obtaining container traffic between central Canada and Halifax. Trucking firms can occasionally quote rail-competitive rates when the containers provide backhaul loads. However, at present, trucks are not in a position to match rail on a service, capacity or cost basis.

Halifax's competitive cost advantage over New York (and other U.S. East Coast ports) stems, to a large degree, from the lower-cost land transportation that CN Rail offers versus trucking from New York. Despite higher terminal costs and the extra cost of diverting a ship to Halifax, the Halifax route is the lower-cost route to Montreal and Quebec due to a $345/container rail vs. truck advantage. This cost advantage would disappear if containers were trucked to Montreal and Toronto instead of moving by rail. In fact, it is expected that inland transportation trucking costs would be considerably higher for Halifax based on the extra distance from Halifax to Montreal and Toronto versus New York.

Operational considerations detract from trucking's ability to serve as alternative to rail transportation. The replacement of the current unit trains by a truck fleet would require substantial changes at the port to handle the increased volume of trucks. Rail has greater flexibility to handle fluctuations in volume. CN at times provides up to four trains per day into the port. It is not likely that a trucking firm would have the same level of available capacity (equipment and personnel). Roadway capacity would also be a problem.

6.0 SHIPPER/RECEIVER SURVEY

This chapter summarizes the shipper/receiver survey undertaken as part of this study. The major objectives of the survey and the information expected from the surveys are highlighted in Section 6.1. Section 6.2 presents a description of the methodology selected for the survey and the sample of firms selected for the interviews, while Section 6.3 summarizes the results of the survey. Appendix D presents a detailed analysis of survey results.

6.1 SURVEY OBJECTIVE

The major objective of the shipper survey was to determine the relative importance of rail services to specific industries and the impact that changes in rail service would have on these industries. The transportation decision-makers of the businesses that were believed to use rail service were asked to: identify the modes of transport used in their operations and the reasons for using each mode; identify products and volumes shipped by mode, rates, and transport price sensitivity; rate the importance of direct rail service to the company's operation; and discuss implications for their operations, should direct rail service no longer be available. A sample of the questionnaire used in the survey is presented in Appendix C.

6.2 SURVEY METHODOLOGY

Key to the shipper survey is the universe of businesses that have used or currently use rail. This universe was developed from numerous sources including the Nova Scotia Directory of Manufacturers, the Canadian Seaway and Ports Directory, the Atlantic Provinces Transportation Directory, and from the consultants' and clients' collective knowledge of such firms. The sample of firms interviewed was drawn from this universe.

The methodology used for the survey was a questionnaire mailout, followed by a telephone interview, with key companies being interviewed face to face. This combination of survey techniques was selected because it provides for a cost-effective response. The previous experience of the survey team suggested a mailout questionnaire without any follow-up would not be effective. Not only is the response rate very low, but the results might be subject to response bias, as it is possible that only firms with specific interests will reply to the questionnaire. The telephone interviews help to minimize this response bias. Furthermore, the personal interviews provide the study team with the personal contact required to fully appreciate each company's position and transport requirements.

The survey universe was divided into large, medium, and small shippers, based on each company's number of employees, type of products, and the study team's estimates of their potential rail use. Questionnaires were mailed to 67 large companies, 20 medium-sized companies, and 15 small companies. Each questionnaire was accompanied by an introductory letter explaining the purpose of the study and noting that study team members will be contacting them shortly. In addition, 15 face-to-face interviews were conducted with key companies (some of whom also responded to the mailout survey) to provide the study team with a deeper appreciation of the operations and problems in selected key industries.

Forty-six of the large companies, 13 of the medium-sized companies, and 5 of the small companies responded positively to the follow-up interview. The lower response rate from the smaller companies may be due to the fact that these companies generally do not use rail to any significant extent and hence were not particularly interested in the study. For analytical purposes, the companies responding to the surveys were classified into various industry groupings, as shown in Exhibit 6.1.

EXHIBIT 6.1

INDUSTRY GROUPING OF RESPONDENTS TO SHIPPER/RECEIVER SURVEY

Industry	No. of Companies Responding
Building Materials	13
Chemicals	11
Steel	5
Feed, Food, and Beverages	12
Pulp and Paper	4
Shipping Lines	4
Automotive Products	6
General Commodities	7
Gypsum	2
TOTAL	64

6.3 SHIPPER SURVEY RESULTS

A detailed analysis of the survey results for each of the industry groups shown in Exhibit 6.1 is presented as Appendix D. An overview of survey results follows. Interviews with gypsum industry respondents are summarized in a separate chapter of this report.

Exhibit 6.2 summarizes responses to the rail-related issues addressed by the survey for each industry group. Overall, two-thirds of the companies responding did not have any major problems with rail transportation services and rates. The major problems encountered concerned damage, disruptions and delays in transit, slow/poor service and equipment availability.

Nearly two-thirds of the companies felt direct rail service to be highly important (25 percent) or indispensable (40 percent) to their operations. While very few companies must rely upon rail exclusively due to the physical characteristics of their products, most companies have at least one commodity whose shipment is considered uneconomical to transport by any mode other than rail because of the volume or distance involved. These companies consider rail to be highly important or indispensable for their operations. Shipping lines, automotive product companies and building material supply firms indicated the greatest degree of dependence upon direct rail service and would be the firms most adversely affected by the loss of this service.

Forty percent (40%) of the companies indicated they would respond to a loss of direct rail service by switching to another mode. While truck was the mode most frequently mentioned, several companies indicated they would ship by water. Eight companies (13 percent) indicated they would have to undergo a change in products or markets, while eleven companies (18 percent) indicated a major change in company logistics would be

EXHIBIT 6.2 - SUMMARY OF RESPONSES TO RAIL-RELATED ISSUES

Industry Group	No. of Companies Represented	Tonnage Moved by Rail		Problems with Rail Transportation Services and Rates	Importance of Direct Rail Service	Impact of Loss of Direct Rail Service	Projected Future Use of Rail
		Inbound	Outbound				
1. Building Materials	13	166,873	132,250	- No major problems (8) - Damage (2) - Disruptions and delays (2) - No rebates (1)	- Of some importance (1) - Important (1) - Highly important (4) - Indispensable (7)	- Switch to alternative mode (4) - Change products or markets (5) - Major change in company logistics (2) - Move out of N.S. (1) - No answer (1)	- Increase (6) - Decrease (1) - Same (6)
2. Chemicals	11	41,005	60,700	- No major problems (9) - Disruptions and delays (1) - Inconvenient schedules (1)	- Not important (2) - Important (2) - Highly important (3) - Indispensable (4)	- No effect (2) - Switch modes (5) - Change product or markets (1) - Major change in company logistics (2) - May go out of business (1)	- Increase (5) - Decrease (1) - Same (4) - Not Applicable (1)
3. Steel	5	34,120	47,500	- No major problems (5)	- Of some importance (1) - Important (2) - Highly important (1) - Indispensable (1)	- Switch modes (2) - Change product or market (1) - Major change in company logistics (1) - May go out of business (1)	- Increase (3) - Same (1) - Decrease (1)
4. Feed, Food and Beverages	12	590,140	55,600	- No major problems (8) - Disruptions and delays (3) - Slowness, poor service (3) - Unavailability of equipment (2) - High rates (1)	- Not important (2) - Of some importance (1) - Important (4) - Highly important (1) - Indispensable (4)	- No effect (2) - Switch modes (7) - Major change in company logistics (1) - May go out of business (2)	- Increase (3) - Decrease (1) - Same (6) - No answer (1) - Not applicable (1)
5. Pulp and Paper	4	37,794	429,185	- No major problems (1) - Disruptions and delays (1) - Unavailability of equipment (2) - Damage (1)	- Important (1) - Highly important (3) - Indispensable (1)	- Switch modes (4) - Major change in company logistics (1)	- Increase (2) - Decrease (2)

EXHIBIT 6.2 (continued)

6. Shipping Lines	4	701,880	503,100	- No major problems (4)	- Indispensable (4)	- Major change in company logistics (1) - Move out of N.S. (1) - May go out of business (2)	- Increase (2) - Same (2)
7. Automotive Products	6	80,741	87,000	- No major problems (2) - Damage (1) - Poor service (1) - High rates (2) - Unavailability of equipment (1) - Delays (1)	- Important (2) - Highly important (2) - Indispensable (2)	- Switch modes (2) - Major change in company logistics (2) - Move out of N.S. (2)	- Increase (3) - Same (1) - No answer (2)
8. General Commodities	7	87,280	2,250	- No major problems (5) - Delays (1) - CN monopoly position (1)	- Not important (2) - Important (1) - Highly important (2) - Indispensable (2)	- Not affected (2) - Switch modes (2) - Major change in company logistics (1) - Change product or markets (1) - May go out of business (1)	- Increase (4) - Same (2) - No answer (1)
TOTALS	62	1,739,833	1,317,585	- No major problems (40) - Disruptions and delays (8) - Damage (4) - Slowness, poor service (4) - Unavailability of equipment (5) - Inconvenient schedules (1) - High rates (1) - No rebates (1) - CN monopoly position (1)	- Not important (6) - Of some importance (3) - Important (13) - Highly important (16) - Indispensable (24)	- No effect (6) - Switch modes (25) - Change product or market (8) - Major change in company logistics (11) - Move out of N.S. (4) - May go out of business (7) - No answer (1)	- Increase (27) - Decrease (6) - Same (22) - Not applicable (2) - No answer (4)

required. Eleven companies (18 percent) indicated they would have to move out of Nova Scotia or go out of business. These were, as one would expect, the companies who rated rail service as indispensable and tended to ship products through the Port of Halifax.

The vast majority of companies indicated a continued commitment to rail service in the years ahead, with 44 percent intending to increase their use of rail as a result of anticipated market growth or plans for expansion and modernization. Another 35 percent felt their use of rail service would continue at the same level as today. Only 10 percent expected their use to decrease.

7.0 EFFECT OF NEWFOUNDLAND RAILWAY CLOSURE

7.1 INTRODUCTION

The Canadian National Railway line to Sydney serves a number of purposes; principally, it serves shippers located along the line and the ferry terminus at North Sydney for furtherance of cargo to Newfoundland. In the past, the majority of all Newfoundland traffic moved through North Sydney and then went by Marine Atlantic (CN Marine) to Port-aux-Basques for furtherance throughout Newfoundland. The exact mode of the cargo flow has varied over the years. First there was the land transfer of freight followed by the interchange of wheel sets from freight cars and related labour adjustments. More recently, cargo has moved by container over the rail lines of CN from or to various points in North America and then by ferry to Port-aux-Basques for furtherance by rail to Newfoundland (though some traffic did continue by truck). In addition to this, other traffic has traveled by container to Newfoundland in recent years by Atlantic Container Express (ACE) from Montreal to St. John's and other containers have moved via ASL from Halifax to St. John's. Most recently, a new service to Corner Brook has been initiated to handle the growing volume of traffic destined for the western part of Newfoundland.

On September 30, 1988 the Newfoundland railway service was abandoned in favour of increased highway traffic as outlined in the terms of an agreement between the Province of Newfoundland and the Government of Canada, dated June 20, 1988. This has changed the dynamics of freight movements to Newfoundland, as described below.

7.2 ALTERNATIVE ROUTINGS

A number of alternatives exist for movement of Newfoundland traffic:

1. Rail to North Sydney then by Marine Atlantic to Port-aux-Basques for furtherance by highway carrier (predominately western Newfoundland).

2. Truck to North Sydney then by Marine Atlantic to Port-aux-Basques with the remainder of the route by highway carrier (predominately western Newfoundland).

3. Rail or truck to North Sydney then by Marine Atlantic to Argentia for furtherance by highway carrier (predominately eastern Newfoundland). Marine service to Argentia in the past has been offered only in the summer months.

4. ACE from Montreal to St. John's for furtherance by truck (predominately eastern Newfoundland).

5. Rail to Halifax then by ASL to St. John's for furtherance by highway carrier.

6. Truck to Halifax then by ASL to St. John's for furtherance by highway carrier, as above.

7. A new route has been established from Montreal by ACE to Corner Brook for furtherance by truck, predominately to western Newfoundland.

Each of the above alternatives has a consequence for the Truro to Sydney line. Because of the discontinuance of service on the Truro to Sydney line and rail service throughout Newfoundland, the choice of routes will no longer be influenced by any importance which through-railway movements may have had in the choice of routing in the past. For example, the labour adjustment program applied to rail movements through North Sydney with CN traffic moving over the Truro-Sydney line is partly in response to this program.

Today, and perhaps more so in the future, the routing of traffic will depend on the total transportation costs and the physical distribution logistics associated with container and trailer movements. A favourable marine rate from Halifax to St. John's, for example, may more than offset any actual rail rate advantage that may exist through North Sydney. A rate advantage over Sydney could result as a consequence of the Terms of Union provisions as they apply to rail freight rates to Newfoundland. The rate advantage may not reflect an actual cost advantage. As explained below, carriers will offer services to Newfoundland over the most cost-effective route, regardless of the method by which the rate is calculated. Similarly, outbound traffic from Newfoundland may have different logistics associated with it than does inbound traffic--for example, loaded containers may move inbound from Halifax to St. John's, move empty to Corner Brook and then move loaded from Corner Brook to Montreal; alternately, the container could even move inbound empty from North Sydney to Port-aux-Basques for movement to Corner Brook for loading and furtherance.

7.3 RTC DECISION

On August 28, 1987 the review committee of the Canadian Transport Commission issued Decision Number 1987-02 which reviewed the question of the meaning of the Terms of Union and their implication for the establishment of an appropriate costing methodology for the movement of CN's containers to and from Newfoundland.

As a result of the review, the committee concluded that:

> "Newfoundland is entitled to be treated as if it were part of Maritime mainland with the added distance across the water treated as an all-rail throughhaul. In calculating these rates, CN should relate them to the mainland Maritime rates on similar commodities, not to the costs of moving this freight ... The rates calculated in this manner will represent the maximum rates CN can charge for freight moving to, from and within Newfoundland ... CN is free to set rates at any lower level, providing compensatory requirements of Section 276 are met. Hence, it is only when CN wishes to price freight movements at rates lower than what it determines to be the Maritime level for Newfoundland, that the costing criteria established by the RTC decision become relevant ... The constitutional rights guaranteed under the Terms of Union are fully ensured without according separate costing formula to the Island."

As a practical matter, CN has interpreted this decision to mean that existing rates to points in New Brunswick and Nova Scotia are used as a basis for new rates to Newfoundland. Rates from other parts of Canada to one or more of the following points are used as the rate basis for the Newfoundland rates: Truro, Sydney, Moncton and Halifax. These rates are averaged and then extended to Newfoundland points on the basis of mileage without any change to reflect car cycle times or other factors such as ferry service costs. Because rail service no longer exists on the island, the rail rates continue to apply (unless tested and somehow defeated in a higher court) to the through movement from origin to Newfoundland, even though the final portion of the trip is accomplished by truck.

It can be argued that the rate prescribed by the RTC decision is not affected by a change in the mode of carriage, and therefore CN could move the containers by truck for any part of the mainland route so long as the rail rates continue to apply (one might go so far as to suggest that a rail movement originating west of Montreal could even be transferred to a marine mode at Montreal for delivery in Newfoundland while still adhering to the original constructed railway rates).

The effect of the RTC decision on the traffic utilizing the Truro to Sydney line can be very significant. In fact, a significant amount of the traffic has already shifted from Sydney to Halifax, according to CN spokespersons. That is, where traffic had previously moved perhaps 50 percent via North Sydney and 50 percent through Halifax, recent figures indicated that only 30 percent of the traffic now moves through North Sydney with the remainder using Halifax.

7.4 IMPLICATIONS FOR NOVA SCOTIA RAIL USERS

The competitive nature of the marine movement, coupled with the corporate separation of Canadian National and CN Marine, compounded by the abandonment of railway service on Newfoundland, in the view of the consultants, will lead to a further deterioration of the traffic balance noted above. The dynamic forces which give rise to the initial shift are accelerated by the changing relative positions of the rail lines to Sydney and Halifax. That is, as the density on the Sydney line decreases, the costs of operating that line for all remaining traffic rise while the opposite occurs on the Halifax line so that the addition of traffic to that line makes it less costly for that traffic. While CN would not initiate the shift from the Sydney line to the Halifax line on their own accord, once the shift takes place for another reason, the compounding effect makes the process cumulative and thereby further justifies shifting traffic from one line to the other.

Once the shift has begun, the consultants believe that it will continue so that the economics of the line from Truro to Sydney will be significantly jeopardized. In the view of the consultants, the process has already begun, and it will continue in the near term future so that the economics of the line to Sydney will continue to deteriorate while the line to Halifax will continue to improve, relatively. This shift has two effects that are similar to those described later in this report concerning changing traffic levels. That is, as traffic moves off the Truro to Sydney line and onto the Halifax line, the contribution above long-run variable costs that was being used, in part, to offset some of the constant costs of the Truro to Sydney line are no longer available for that purpose. If the line to Sydney is to remain open, greater strain is placed on the remaining traffic and their rate levels to generate the revenue previously contributed by the Newfoundland traffic. As noted in Chapters 10 and 11, the future of a major portion of that other freight traffic itself seems somewhat tenuous, and the prospect of deriving additional revenues from that traffic to support the Truro to Sydney line is doubtful.

If the traffic that shifts over tc Halifax remains as a railway movement (as opposed to, for example, trucking from the Moncton load centre), then the economics of the Halifax line will improve somewhat. This means the increase in freight rates that were expected to be required in Chapter 11 as a result of the loss of the railway traffic originating or terminating locally on the Truro to Sydney line would be modified to some extent. The consultants have investigated the extent to which the revenue requirements to sustain the rail operations on the Truro-Halifax line may benefit from rerouted Newfoundland traffic over Halifax. In point of fact, with the movement of the remainder of the traffic from North Sydney to Halifax as the departure point to Newfoundland, one could expect that the suggested increases in freight rate discussed in Chapter 11.0 could be offset by at least two-thirds. In addition, with improved efficiencies on the line to Halifax, a greater portion of the freight revenue would represent the contribution to constant costs as the portion of the freight rate representing long-run variable costs decreases. Of course, the impact of this shift on the economic viability of the CN marine service from North Sydney would be a matter that might modify the decisions of those looking at overall transportation issues in Atlantic Canada. Within the Terms of Reference of this study, however, that consideration has not been addressed. In addition, the interrelationship between container traffic, truck traffic and passenger car traffic on the Newfoundland ferry services and the issue of dangerous goods transportation to Newfoundland is another matter which may affect ultimate decisions respecting the potential abandonment of the Truro to North Sydney rail service. The role of the Newfoundland traffic in this regard can be significant.

The shift of Newfoundland traffic from North Sydney to Halifax or vice versa will not occur as a result of the RTC decision and the force of the Terms of Union. From the perspective of the Nova Scotia government, it would be necessary to invoke other considerations if there is a desire to see traffic traveling via rail to North Sydney for furtherance to Newfoundland. In the consultants' estimation, the rail traffic will seek its least-cost overall routing, recognizing that the rates are pre-determined by virtue of the RTC decision. The routing of Newfoundland traffic through Nova Scotia may be determined by a variety of factors. The routing will not be determined specifically because of the Terms of Union and the RTC decision. Based on our analysis, the critical issue will be retention of this traffic on the rail mode itself rather than the routing through North Sydney or Halifax. If it is retained by rail and the traffic shifts from the North Sydney line to the Halifax line, it may contribute to offseting at least two-thirds of the rate increase suggested by the loss of other rail freight traffic from the Truro to Sydney line.

8.0 IMPACT OF CHANGES TO PRINCE EDWARD ISLAND TRANSPORTATION SYSTEM

8.1 INTRODUCTION

Two possible major changes to PEI's transportation system are currently being considered by various parties. The first of these is the construction of a fixed link between Prince Edward Island and the mainland. The second is the impending closure of direct rail service between the mainland and Prince Edward Island. This chapter discusses the implications these potential changes have for Nova Scotia's road and rail system.

8.2 IMPACT OF FIXED LINK ON HIGHWAY SYSTEM

Because of recent expressions of interest by private sector groups to build a fixed-link crossing across Northumberland Strait between New Brunswick and Prince Edward Island, the Government of Canada (Public Works Canada) has initiated a number of studies to examine specific areas of potential impact. One of these studies* investigated, in detail, effects and impacts that might occur to the provincial highway systems of New Brunswick, Nova Scotia and Prince Edward Island from fixed crossing-related traffic.

In general terms, the study identified the changes in highway traffic volumes and patterns in each of the three provinces that would result from construction of a fixed link and quantified the resulting changes in highway needs in each of the three provinces.

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*Geoplan Consultants Inc., "Impact of the Prince Edward Island Fixed Crossing on Provincial Highway Systems," Fredericton, NB, October 1988.

To determine the impact the fixed crossing would have on traffic volumes, the traffic stream was divided into relevant traffic components including: existing traffic base, induced traffic, and diverted traffic. A previous report entitled "Economic Feasibility Assessment for the Northumberland Strait Crossing" concluded that a 25 percent rate for generated traffic could be assumed. This 25 percent rate was used in the study as a reasonable estimate of induced passenger activity. This generated traffic was then distributed to the roadway network using the results of a 1979 passenger origin-destination study.

The study also examines the potential for increased commercial (truck) traffic resulting from the fixed crossing. It was concluded that the construction of a fixed crossing will not greatly increase the amount of freight that is consumed or produced by the businesses and residents of Prince Edward Island. However, the report did note some modal shifts and economic enhancements may increase the amount of truck traffic that passes between Prince Edward Island and the mainland. One of these areas where a modal shift is possible is aggregate from New Brunswick. Overall, the report concluded that truck movements to Prince Edward Island would increase by 5-10 percent, should the fixed crossing be constructed.

With respect to diverted traffic, it was noted that the construction of a fixed crossing to Prince Edward Island would reduce the average travel time between Borden and Cape Tormentine by an estimated 80 minutes compared to the existing ferry service. It was concluded this decrease in travel time would have a substantial impact upon the volumes of traffic utilizing the Wood Islands to Caribou ferry service which currently has an average travel time of approximately 155 minutes. Assuming those now traveling on the Wood Islands ferry service would continue to do so, provided they experienced no more than a half-hour travel time disadvantage, estimates of traffic diverting to the fixed crossing were made. The application of this time rule resulted in approximately 47 percent of all Wood Islands traffic diverting to the crossing. In general terms, those traveling between central and western Prince Edward Island and southern and western Nova Scotia account for the bulk of the traffic diversions.

Capacity calculations for the affected highway systems in each of the three provinces where then conducted using two traffic scenarios. The first scenario considered only the existing traffic and, hence, represented the base condition. The second scenario considered the induced and diverted traffic in addition to the existing traffic. Capacity calculations followed the procedures outlined by the 1985 Highway Capacity Manual.

The existing or base level of service on each link within the study network was determined, along with the future level of service. The future level of service considered the following scenarios:

1) existing traffic base projected over the 35-year study period at a normal growth rate of 2.5 percent.

2) the addition of the incremental traffic of 25 and 5 percent induced passenger and commercial traffic and the diverted traffic at the year 1993 and then projected at 2.5 percent for the remainder of the study period.

3) the addition of a higher level of incremental traffic of 45 and 10 percent induced passenger and commercial traffic and the diverted traffic at the year 1993 and then projected at 2.5 percent for the remainder of the study period.

Threshold limits identifying the points at which highway improvements should be undertaken for particular sections of highway were then identified. The highway improvements required by each of the three traffic scenarios analyzed were then identified. The most common impact associated with the incremental and induced traffic from the fixed crossing was the advancing in time when a highway improvement was required. Given prescribed discount rates of 5 percent and 10 percent, it was then possible to compare the present worth of what would have been required in the absence of the fixed crossing with the present worth of fixed-crossing improvements. The difference in present valuations arising from the timing of improvement alternatives represents the "build sooner" cost implications of particular fixed-crossing traffic scenarios.

Because of traffic diversions, some road improvements in Prince Edward Island and Nova Scotia were actually pushed back further in time than would have been necessary without the fixed crossing. In Nova Scotia, because of traffic diversions away from the Truro to Caribou highway, a large number of the impacts from the fixed crossing involved possible delays in required highway improvements. Using a 10 percent discount rate, it was determined that Nova Scotia would actually receive a benefit, expressed in 1988 dollars, of $1.421 million. Using a 5 percent discount rate, this benefit decreases to $0.67 million.

In addition to considering the impact of the incremental traffic on roadway capacity, the study also considered the impact on pavement life. The analysis used the Ontario Flexible Pavement Design Method as contained in the RTAC Pavement Management Guide. Using this methodology, the truck traffic was converted into equivalent single-axle loads (ESALs). The annual truck loadings in terms of equivalent single-axle loadings was then calculated for each of the three traffic scenarios described.

In these calculations, the additional truck traffic (induced plus diverted) was added to the base truck traffic, or the truck traffic that could be expected without a fixed link.

The results of the EASL traffic forecast were then used to predict the roadway life, with and without the additional traffic, of individual highway sections in each of the three provinces. While it was determined the incremental traffic would reduce roadway pavement life on some road sections in New Brunswick and Prince Edward Island, there were no discernible decreases in roadway life in Nova Scotia.

In summary, the construction of the fixed link between Prince Edward Island and mainland New Brunswick would produce minor benefits with respect to construction and maintenance costs on the Nova Scotia highway system. These benefits would occur mainly on the Truro to Caribou highway where it was felt that traffic would decrease, as it would divert from the ferry crossing to the fixed crossing.

8.3 IMPACT OF RAILWAY CLOSURE

The potential abandonment of rail service between Prince Edward Island and the mainland has recently been the subject of two studies for the Governments of Canada and Prince Edward Island. These studies examined the impact on transportation cost and services for shipments from and to Prince Edward Island, as well as the impact of additional truck traffic on Prince Edward Island's road system. The impact of the closure of this railway service on Nova Scotia's road and rail system was not specifically identified. However, some of the analyses contained within these reports does provide relevant information, which, when combined with available data on rail movements between Prince Edward Island and Nova Scotia, allows this impact to be quantified.

Exhibit 8.1 summarizes the tonnes of rail freight moved between Nova Scotia and Prince Edward Island for the years 1981 to 1984, inclusive. As illustrated by Exhibit 8.1, total traffic between the two provinces has been decreasing in recent years, and the predominant flow of rail freight has been from Nova Scotia to Prince Edward Island.

Rail traffic from Prince Edward Island to Nova Scotia was nonexistent in 1984 and virtually nonexistent in both 1982 and 1981. The maximum movement was 2,244 tonnes in 1983. Rail traffic to PEI has decreased from 11,937 tonnes in 1981 to 1,587 tonnes in 1984. Available Statistics Canada data on commodity type indicate that the majority of the traffic from Nova Scotia to PEI was crude materials, inedible, and fabricated materials, inedible.

Assuming the 1984 traffic rail freight traffic from Nova Scotia to PEI were moved by truck, approximately 80 additional one-way truck movements would result. This is based on an average payload of 20 tonnes/truck movement, with trucks loaded in one direction only. This assumes that the trucks are five-axle tractor-trailers loaded to approximately 80 percent of maximum payload. It is noted that trucks are typically loaded going into Nova Scotia but have some difficulty obtaining sufficient backhaul for the trips out of Nova Scotia. It is therefore possible that this traffic would be picked up by a backhaul movement of an existing carrier, thereby negating the small increases in truck traffic noted.

The report, "Impact of Railway Abandonment on Transportation Costs and Service in Prince Edward Island," by ADI Limited identified some commodities moving within the Maritimes by rail at present that would potentially switch to truck, should the rail to PEI be closed. In particular, suppliers of propane indicated that they would have to augment their current fleet of

EXHIBIT 8.1

TONNES OF RAIL FREIGHT BETWEEN NOVA SCOTIA AND PRINCE EDWARD ISLAND (1981-1984)

	Nova Scotia to PEI	PEI to Nova Scotia	Total
1984	1,587	0	1,587
1983	5,679	2,244	7,923
1982	9,427	9	9,436
1981	11,937	117	12,054

Source: Statistics Canada Cat. No. 52-214
Railway Transport

trucks to move this product to Prince Edward Island during periods of peak demand, should the rail service be discontinued. During other times of the year, some of these vehicles could be put into service elsewhere, which would likely mean less propane moving by rail throughout the Maritimes. Another possibility could be potash being trucked from more local sources rather than moving by rail from Saskatchewan as at present. This potash, however, would likely come from New Brunswick. Overall, it would appear that the potential for increased truck movements of these commodities within Nova Scotia would be fairly limited and, at most, represent a few hundred truck trips per year.

8.4 SUMMARY

Overall, it is our assessment that the potential changes to Prince Edward Island's transportation system (i.e., a fixed link and closure of the rail service) will have little discernible impact on Nova Scotia's road and rail system. There will be some minor increases in truck traffic as noted, while the requirements for highway upgrading are slightly decreased as a result of traffic diversions from the highway between Truro and Caribou due to the construction of the fixed link.

9.0 IMPLICATIONS OF VIA RAIL PASSENGER SERVICE

VIA Rail services in Nova Scotia are as follows:

Halifax-Truro-Sydney	daily return service
Halifax-Truro-Port Hawkesbury	daily return service
Halifax-Moncton	daily return service
Halifax-Windsor Jct. (Halifax-Yarmouth DAR rail line)	daily return service
Transcontinental, Halifax-Saint John-Montreal	daily service

VIA Rail services in the Atlantic Region are supported by the federal government in the same manner and to the same extent as passenger services are supported across Canada. Direct revenues for passenger service in Nova Scotia are itemized by service route for 1984 and 1987 on Exhibit 9.1. The VIA subsidies arising from the inadequacy of passenger revenues for 1984 were similarly published by service route in the Economic Growth Transportation: A Study Team Report to the Task Force on Program Review (Nielsen Task Force). Using these revenues and cost data, patronage levels in 1987 and general knowledge of railway input prices occurring since 1984, government payments in support of VIA service on a line-by-line basis can be projected. Exhibit 9.1 itemizes information pertaining to VIA services by individual service route in Nova Scotia. In 1984, patronage levels reached 752,688 compared to 598,495 in 1987. VIA passenger revenues were $5.567 million in 1984 and $5.903 million in 1987. Government payments in support of VIA operations on the subject CN lines in Nova Scotia reached $8.997 million in

EXHIBIT 9.1

NOVA SCOTIA RAIL STUDY

VIA RAIL PASSENGER SERVICES AND RAIL TRANSPORTATION IN NOVA SCOTIA

VIA Rail Passengers:	1984	1987
Halifax-Sydney	170,955	101,634
Halifax-Saint John-Fredericton	113,344	45,796
Transcontinental	468,389	451,065
TOTAL in Study Region	752,688	598,495

VIA Rail Revenues: (millions) Nova Scotia Allocation Only	1984	1987
Halifax-Sydney	$ 1.876	$1.879
Halifax-Saint John-Fredericton**	$ 0.547	$0.360
Transcontinental**	$ 3.144	$3.664
TOTAL in Study Region	$ 5.567	$5.903

VIA Rail Subsidy:* (millions) Nova Scotia Allocation Only	1984	1987
Halifax-Sydney	$ 6.904	not available
Halifax-Saint John-Fredericton	$ 2.086	not available
Transcontinental	$ 7.406	not available
TOTAL in Study Region	$16.396	

Subsidy per Passenger - 1984 Nova Scotia Allocation Only	
Halifax-Sydney	$40.38
Halifax-Saint John-Fredericton*	$18.40
Transcontinental	$15.811
TOTAL	$16.396

VIA Rail Subsidy - 1987*** Nova Scotia Allocation Only	Per Passenger	For 1987 Traffic Levels
Halifax-Sydney	$43.04	$4,374,553
Halifax-Saint John-Fredericton**	$19.62	$ 898,330
Transcontinental**	$16.85	$7,600,445
VIA Rail Subsidy 1987 - for noted services		$12,873,328

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* Subsidy refers to the amount paid by the government to support the operations of VIA Rail that otherwise represents a shortfall between VIA Rail passenger revenues and costs.

** Only 41 percent of this amount pertaining to the Halifax-Saint John-Fredericton be attributed to the portion of the move within the Province of Nova Scotia. In addition, the Saint John-Fredericton section of this service was discontinued late in 1985. These changes have been incorporated into information presented in this table.

In a similar manner, the Nova Scotia portion of the Montreal-Halifax service represents about 18 percent of the movement. As a result, only 18 percent of the cost is allocated to the study area.

The apportionment is based on rail line mileage over the route served.

***Estimated on the basis of changes in railway price indices observed over the period between 1984 and 1987.

1984, and $5.280 million has been estimated by the consultants for 1987. In total, VIA has available $500 million to $600 million each year* to meet its costs.

According to the background work undertaken by the Nielsen Task Force, about 60 percent of VIA operating costs represent payments to the railway companies for such matters as compensation for use of rail infrastructure, crewing, and equipment servicing. Payments made to the railways by VIA were also published by the Nielsen Task Force for 1984. Utilizing this information and allocating the payments proportional to route distances, CN revenue from VIA rail can be estimated. Exhibit 9.2 contains information on passenger levels, railway payments by route per passenger and per passenger mile from the Nielson Task Force Report for 1984. VIA payments to CN for these services was $43.047 million in 1984.

Since 1984 VIA Rail has worked towards reducing services provided by CN and CP under the terms of the railway passenger service contracts in place. These contracts specify the nature of railway charges to VIA for the use of tracks, facilities, train personnel, rolling stock servicing and refurbishing. Railway personnel and responsibility for maintenance operations, operating crews, station expenses and train refueling are now assumed by VIA or are in the process of being transferred to VIA. These changes have allowed VIA to reduce the level of payments to the railways by more than 50 percent, according to VIA's 1987 annual report. The consultants estimate that payments to CN for VIA services in Nova Scotia were $5.2 million in 1987.

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*VIA Rail Canada Inc. Annual Reports 1983-1987 itemize government funding at $597.6 million in 1983, $473.5 million in 1984, $631.4 million in 1985, $506.1 million in 1986, $536.4 million in 1987.

EXHIBIT 9.2

NOVA SCOTIA RAIL STUDY

IMPACT OF PAYMENTS TO RAILWAYS RELATED TO PROVISION OF VIA RAIL PASSENGER SERVICES ON THE RAIL TRANSPORTATION NETWORK IN NOVA SCOTIA

	1984	1987
VIA Rail Passengers:		
Halifax-Sydney	170,955	101,634
Halifax-Saint John-Fredericton	113,344	45,796
Transcontinental	468,389	451,065
TOTAL in Study Region	752,688	598,495
Railway Payments*: (millions)		
Halifax-Sydney	$ 6.223	not available
Halifax-Saint John-Fredericton	$ 4.539	not available
Transcontinental	$32.285	not available
TOTAL in Study Region	$43.047	
Railway Payments per Passenger - 1984:		
Halifax-Sydney	$36.40	
Halifax-Saint John-Fredericton**	$40.05	
41 percent	$16.419	
Transcontinental**	$68.93	
18 percent	$17.41	
Railway Payments per Passenger - 1987***: Nova Scotia Allocation Only	Per Passenger	For 1987 Traffic Levels
Halifax-Sydney	$18.20	$1,849,739
Halifax-Saint John-Fredericton**	$ 8.75	$ 400,715
Transcontinental**	$ 6.61	$2,981,540
VIA Rail Payments to Railways 1987 - for noted services		$5,231,994
Revenue Passenger Miles: (millions) Nova Scotia Allocations Only	1984	1987
Halifax-Sydney	21.201	13.355
Halifax-Saint John-Fredericton**	6.121	2.289
Transcontinental**	32.369	24.990
Railway Payments per Revenue Passenger Mile	1984	1987 (estimate)
Halifax-Sydney	$0.294	$0.139
Halifax-Saint John-Fredericton**	$0.304	$0.175
Transcontinental**	$0.199	$0.119

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* Payments to railways refers to the amount charged by main line railways that provide trackage and services to VIA Rail required for the provision of rail passenger service. In the past, these payments have represented about 60 percent of all VIA Rail costs. The payments are calculated by the NTA as set forth by Costing Order R-6313 and include 100 percent of railway costs for support of the VIA Rail operation.

** Only 41 percent of this amount can be attributed to the portion of Halifax-Saint John-Fredericton move that occurs within the Province of Nova Scotia. The amount pertaining to activities in Nova Scotia is shown, excluding costs allocated to New Brunswick. It is worth noting that the Saint John-Fredericton section of this service was discontinued late in 1985. Only the amount pertaining to Nova Scotia is shown for 1987.

In a similar manner, the Nova Scotia portion of the Montreal-Halifax Transcontinental service represents about 18 percent of the movement. As a result, only 18 percent of the payments are allocated to the study area.

***According to VIA Rail Canada Inc. Annual Reports, payments to the railways have, since 1984, decreased by at least 50 percent. In this analysis, the 1984 payments to the railways per passenger for each of the subject routes have been reduced by 50 percent. This change in level of payments includes the impacts of inflation, price changes and productivity improvements.

The railways are compensated for 100 percent of their total variable costs attributable to the support of passenger train service calculated according to Costing Order R6313 as applied by the NTA. In total, railway payments pertaining to the portion of the transcontinental service in Nova Scotia are estimated at $2.9 million in 1987. The Halifax-Sydney route generates payments to the railway of about $1.8 million; the Halifax-Saint John service involves about $0.4 million for the portion of the service provided in Nova Scotia.

CTC Costing Order R6313 is designed to identify 100 percent of the variable costs incurred by CN and CP related to the provision and accommodation of passenger train service. Therefore, reduction or discontinuation of any of these passenger services would reduce CN revenues in Nova Scotia. The revenues include costs that would be immediately avoidable if VIA service terminated, in addition to costs which will continue to occur. These include an allocation of corporate overhead expenses, track and roadway ownership and maintenance. Overall, costs that are not avoidable represent about 35 percent of long-run variable costs, and roadway ownership represents about 10 percent of variable costs. The railways have contended in the past that R6313 costing, as it pertains to passenger trains, underestimates and underallocates track and roadway ownership costs. The CTC has supported this postion; however, new regulations reflecting improved costing approaches to deal with these specific issues have yet to be prescribed.

In the event that VIA discontinues passenger services, VIA contributions towards these CN costs will terminate, although a group of overhead costs such as these corporate costs will continue to be incurred near present levels. These costs are different in nature from the avoidable costs. Avoidable costs will, in fact, cease to be incurred if the VIA service is discontinued. Examples of avoidable costs include crew wages for passenger trains, fuel costs and passenger train locomotive costs. As a result, 55 percent, or $2.86 million of the $5.2 million, represents avoidable costs that will disappear in the event that VIA discontinues services. The remaining 45 percent, or $2.34 million, represents costs that will continue to be incurred and must be reallocated as an expense to the remaining traffic on the line. This will have the effect of increasing the unit cost for traffic movements in Nova Scotia.

Rail passenger service increases the utilization level of the CN rail line in Nova Scotia and can improve the overall viability of the rail line segment by contributing $2.34 million in revenues. A similar approach can be used to identify the specific impact of VIA on the Halifax-Sydney portion of the network. Railway payments for 1987 of $1.8 million, representing the cost to CN for supporting the VIA service between Halifax and Sydney, is similarly comprised of 55 percent avoidable costs ($1.0 million) and 45 percent corporate overhead costs, railway ownership and maintenance costs ($0.8 million). The discontinuance of VIA service will have the effect of increasing the long-run variable cost by $1.0 million in Nova Scotia.

In 1984, intraprovincial traffic in Nova Scotia and originating and terminating traffic generated freight revenue of $152.7 million.* Although it is difficult to allocate revenue directly to Nova Scotia on the basis, for example, of line haul distance occurring in Nova Scotia relative to the total line haul of the movement, the consultants have selected an approach to quantify the significance of the revenue levels.

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*CN revenues as reported by Statistics Canada for 1984 are comprised of the following:

- terminating traffic:	$93.505 million
- originating traffic:	47.022 million
- intraprovincial traffic:	12.201 million

For the purposes of identifying the amount of CN freight revenue that can be allocated to Nova Scotia activities, 20 percent of the total revenue from terminating and originating traffic is allocated specifically to Nova Scotia and 100 percent of intraprovincial traffic. These proportions generally represent the proportion of line haul in Nova Scotia. The sum of these components represents about $40 million in revenue for 1987.

The above approach has identified about $5.2 million in CN revenue from VIA specifically for Nova Scotia operations. Freight revenues similarly allocated to Nova Scotia activities represents $40 million. The revenues from VIA, representing an amount equal to 10-15 percent of the freight revenue, can be considered significant from CN's perspective, particularly the $2.34 million representing nonavoidable costs. In the event that VIA service is discontinued, CN shippers will bear the burden of this $2.34 million annually. If the freight rate levels are already set above compensatory levels, given these new circumstances, freight rates will not necessarily be increased because the compensatory requirements of the NTA may already be met; however, in the event that the long-run variable cost increases, the component of the freight rate known as contribution could be reallocated to offset these increases, and the contribution to railway constant costs in total could be decreased.

In the event that rates are set at levels now meeting the long-run variable cost level prescribed by the NTA costing procedures, freight rate levels will undoubtedly increase. The consultant's analysis of current freight rates is the subject of detailed analysis in Chapter 11.0. In general, this analysis indicates that overall revenues from Atlantic Region shippers would need to be increased by 1.5 percent to compensate for the lost contribution from VIA Rail. This increase is based on a regional revenue base of $155.8 million. In order to generate an additional $2.34 million, overall rates would be required to increase by 1.5 percent. Assuming CNR's regional revenue base shrinks to $85.7 million (see Chapter 11.0), representing the worst case, the increases required to offset the lost VIA revenues is 2.7 percent overall.

10.0 IMPACTS OF SELECTED CLOSURES

10.1 INTRODUCTION

The impact the loss of direct railcar service would have on users of the Truro-Sydney line and the East River-Halifax line was investigated. A confidential supplementary report was prepared describing the impact loss of rail service would have on each of these firms. A summary of results is provided below.

In total, nine companies were identified as regular users of rail service on these lines[1]. Products are imported from across Canada and the United States by rail, with the bulk of these imports coming from Ontario and Quebec. Outbound products are destined across North America with the northeastern United States and Ontario/Quebec the primary markets, respectively.

Four (4) of these companies considered direct rail service indispensable to the company's current operations; another four rated the service as highly important or important, while one did not consider rail service to be important. While this latter company is a regular user of rail service, its use is incidental to the company's overall operations. The products shipped by rail could easily be moved by truck.

For the companies rating rail service as important/highly important or indispensable, the consultant team analyzed each option available for moving the product to the plant or to market. This included use of truck, water, short-line rail and piggyback. Transport costs under each option were then compared to existing rail rates where these rates were made available to the study team.

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[1] These companies account for over 90% of the traffic being moved on the lines investigated. Companies not responding to the shipper/receiver survey could also be adversely affected by loss of direct rail services; however, due to their non-response, the consultants were unable to determine the significance of the loss of direct rail service to these companies.

10.2 IMPACT ON COMPANIES RATING SERVICE AS INDISPENSABLE

As noted, four of the companies that would be affected by the closure of the two lines investigated rated direct rail service as indispensable.

Three of these companies currently use rail for outbound products. For one company, the study team considered a short-line rail operation to be feasible, with a potential reduction in transport costs. This would mean the company would have to assume the ongoing responsibilities of operating such a facility. The remaining two companies could potentially ship their products by water. This would mean severe changes in logistics with increased warehousing and distribution facilities. There would be a loss of flexibility in shipment sizes, as shipping by water requires larger shipments to be economical, and hence part of the reason for the warehousing/distribution system. For one company, specialized transportation equipment which could be very difficult to obtain would be required. However, with the required shipping and distribution system in place, transport costs could potentially be reduced from current levels. One company could potentially lose a minor market. Both companies would be required to invest in new facilities to accommodate the change of mode.

Three of the four companies who rated direct rail service as indispensable receive products by rail on a regular basis (one uses rail for outbound products only). In all three cases, increased costs for importing these goods would result. For two of these companies, the increased costs would total approximately 20 percent, or $200,000, annually. These increases would likely be absorbed within the overall operations of the companies. Obtaining the specialized equipment necessary to transport one product by road was critical to one of these companies successfully changing from rail to truck. The third company imports finished products from western Canada and Ontario for retailing in the local area. The price of these goods could increase by 10-20 percent due to the increased transport costs, which in turn would reduce sales, potentially leading to layoff of sales staff.

10.3 IMPACT ON COMPANIES RATING SERVICE AS IMPORTANT/HIGHLY IMPORTANT

Four companies rated direct rail service as either important or highly important. All four companies use rail service for transporting their plant outputs to market. For one company, a short-line railway was a feasible option and could potentially lower their transport costs. Another company would likely switch to the marine mode with a potential reduction in transport costs. This option would require the company to establish a warehousing and distribution system for their products. Changes in the company's loading facilities would be required. There could also be a partial loss of one of their minor markets.

Another company would require changes in their loading facilities as well as specialized equipment to move their products by rail. The fourth company would be required to transship its products destined for western Canada with an increase in transport costs. This could result in some loss of this market, which accounts for 15-20 percent of the company's overall business.

Only one of the companies who rated direct rail service as important/highly important has products incoming by rail. The transport costs for these products would increase by 20 percent to 30 percent. These costs would be absorbed by the company, as they represent a minor component of the company's total operations.

10.4 IMPLICATIONS FOR FUTURE DEVELOPMENT PATTERNS

In addition to the impacts on current users, closure of the Truro-Sydney and the Halifax-East River lines holds implications regarding future development opportunities for the areas affected. Loss of direct railcar service would mean companies dependent upon this service would no longer be able to locate along these lines. Rather, they would likely locate along the Amherst-Truro-Halifax line, provided suitable locations are available. The loss of direct railcar service, therefore, places limitations on regional development opportunities in the areas affected and, in particular, along the Truro-Sydney line.

The loss of direct railcar service does not mean that manufacturing plants cannot locate in the areas concerned. The Michelin Tire plant at New Glasgow is one example of a major manufacturer with shipments throughout North America that does not require direct railcar service. It does, however, make extensive use of CN's Laser Service. As demonstrated by the analysis of options available to current users of the lines studied, the availability of marine transport and the competitiveness of truck with rail over a wide range of commodity types and hauling distances means many companies do not necessarily require direct railcar service.

Increased economic activity in Nova Scotia is projected to be lead by continued growth of the service sector. Companies in this sector of the economy depend primarily upon truck transport to move their products, given the delivery times and flexibility offered by this mode. In this regard, CN's recently introduced Laser Service provides a valuable service to many shippers in the Maritimes. Demand for this service is increasing and should continue to grow as the economies of the Maritime Provinces develop. Provision of this service in a reliable and efficient manner is considered by the consultant to be critical to many of the companies considering either establishing or expanding operations in Nova Scotia.

While the importance of direct railcar service may be less important in the future than in the past for the reasons cited above, the loss of such service does mean the loss of an important regional development tool. This matter is to be considered in more detail by a study recently initiated by the Department of Transportation on the longer term future of Nova Scotia's transportation system.

11.0 RAIL COSTING: TRURO TO SYDNEY LINE

11.1 INTRODUCTION

In evaluating the impact of the abandonment of rail service on the CN Rail line between Truro and Sydney, the consultants analyzed the nature of railway costs incurred by CN while providing service to shippers on the line. The level and nature of these costs were then compared to revenue levels.

The evaluation focuses on the two components of rail freight revenue. First is the long-run variable cost as defined and used by the NTA (formerly by the CTC) for regulatory costing and subsidy purposes. Second is the contribution to constant cost component of the freight rate.

The long-run variable costs vary directly with traffic handled. The difference between the long-run variable cost incurred by the movement and the revenues accruing through the freight rate is known as the contribution to constant costs. Constant costs are not attributable to any specific traffic and are recovered from all traffic in aggregate.

The potential loss of the contribution to constant costs now made by the traffic originating or terminating on the line between Truro and Sydney would represent some impact on CN and its regional system. The impact would be the loss of that contribution as a portion of total revenues that would otherwise support the railway operation both in the Maritimes and throughout the country. This loss of contribution will require all other traffic to share in generating additional revenues to offset that loss. This means that rail freight rates would need to increase for shippers as a whole towards levels that the market can bear until the net losses are recovered. If the market cannot bear the increases resulting from this primary impact, secondary impacts will become evident. Secondary impacts occur when shippers choose another transport mode that presents a better transportation alternative. This generally occurs when rail rates are near the level of competitors' rates, thereby providing the shipper with a transportation option. Truck and marine transportation can offer similar attractiveness in several circumstances in Nova Scotia. Constant costs will, however, continue to be incurred near present levels as they do not vary with fluctuations in business levels.

Contribution levels of 15-25 percent above long-run variable costs are normally required by the railways strictly to recover constant costs. Revenues obtained through market mechanisms for some movements may exceed those levels of contribution. As a result, some movements generate greater contributions to constant costs than others, and once all constant costs are recovered from all freight revenue, profits are accumulated. Freight revenue for a specific movement must, as a minimum, reflect the long-run variable cost of the movement and, to the extent that market conditions permit, will provide some contribution to the constant costs of operating the railway company.

The model used to analyze these components of costs and the corresponding revenues was developed by The Trade & Transportation Group and is maintained and updated as new information concerning railway costs and revenues are made publicly available.

The model is based on the costing methodologies utilized by the railways and approved by the National Transportation Agency which is continuing the responsibilities of the Canadian Transport Commission for regulatory costing and subsidy purposes. Unit costs have been developed to determine the long-run variable costs applicable to 1984 levels. Extensive public costing information was last made available for 1984, largely a result of investigations into the transportion of grain by rail and, since then, has not been made available to such an extent. Additionally, the consultants understand that 1984 is the latest year for which approved unit costs have been established by the NTA for use in regulatory costing and that costs for subsequent years are derived through a process of approved indexation. The Trade & Transportation Group has followed this practice and have indexed the unit costs to 1987 levels by taking into consideration both inflation costs and productivity improvements.

The model includes estimates of all costs to the extent that these costs vary with traffic levels, including depreciation and the cost of capital on assets. These long-run variable costs represent 75-85 percent of total railway costs. The remaining 15-25 percent of total railway costs are the constant costs which are not allocated to any particular traffic movement and must be recovered from all railway traffic in total through appropriate pricing.

Each movement costed reflects the specific nature of that movement wherever possible, accounting for operation and administrative characteristics such as crewing, carload billing and locomotive requirements. Adjustments in the costing techniques in this manner allows efficiencies to be incorporated for the unit train operations such as the dedicated coal and gypsum movements in Nova Scotia.

11.2 REVENUE/COST COMPARISON

The shipper surveys undertaken by the consultants for the purposes of this study form the basis of the rail costing analyses. Shippers were requested to provide data regarding commodity types, tonnages, rates, origin, destination and shipment size. This information was incorporated into the rail costing model, and the rail service output units were calculated. Revenue/cost ratios were then calculated for each of the movements for which rate data were available. Overall, the consultants were able to obtain data covering 1.4 million tonnes of freight originating and terminating on the Sydney-Truro line. This represents a significant proportion of the traffic originating and terminating on that line and, as a result, the consultants are confident the results are reasonable and representative of conditions on the line as the consultants understand the circumstances on the Truro-Sydney line in relation to all rail shippers in Canada.

The consultants wish to respect the confidentiality guaranteed to the survey respondents who were generous to provide excellent data for the purposes of our analyses. For this reason, the results of the analyses are provided in summary form. The consultants believe this approach enables adequate treatment of the issues.

The results of the analysis in general support the position of CN that freight rates in the Atlantic Region are not particularly remunerative. The level of contribution identified in the analysis for individual commodities and traffic lanes is comparable to contributions normal for relatively low-value, bulk commodities. The consultants have identified particular shipments that command attractive rates, from the railway's point of view, and which are large enough in volume to influence the overall contribution ratio to constant costs. Nevertheless, the overwhelming findings with respect to the contribution levels on virtually all of the traffic has two important implications in the Maritime Region.

First, Maritime rail traffic, and in particular the traffic in the Truro-Sydney line, is low density and, as a result, the total revenue contribution is a relatively small amount in total, even though the proportion of the revenue representing contribution can be considered reasonable. This means that each shipment in the Maritimes bears a greater responsibility to ensure that the freight rate supports the operation and maintenance of the line. If, for example, there were more shippers offering more tonnes for transport, then costs of maintaining and operating the rail network could be distributed over this larger group and larger volume and, as a consequence, each individual shipper would bear a smaller share of the costs. Continued operation on the line would then be less dependent on individual shippers.

Second, the level of contribution to constant costs represented as a portion of the freight rate above the long-run variable costs, while consistent with other bulk movement, is generally the level of contribution derived from much larger volumes and longer hauls. The effect is that the total contribution is less in total dollars in this area of the Maritime Region than may be the case in other areas for other movements.

The analysis of the survey data indicates that the single most important factor creating the economic situation of rail service in the study region is the low-density traffic pattern.

The evaluation of the impact of rail line closure on other freight rates in the Maritime Region must only consider the traffic that, to the extent it can be forecast, would continue to move by rail in the future. There are two additional major issues that will affect rail traffic in the future. First is the RTAC proposal for standardizing the regulations governing highway vehicle weights and dimensions. In this respect, the consultants have been requested to identify the impact of the original RTAC proposals on rail traffic originating and terminating on the Sydney-Truro line. The second issue concerns transportation decisions made by shippers. These decisions to switch from rail may be accelerated and influenced by the current rail service situation on the line but are not strictly considered a result of line closure. Each of these issues is discussed below. This discussion includes an evaluation of the effect of each of these factors and line closure on the remaining traffic in the region.

11.3 RTAC VEHICLE WEIGHTS AND DIMENSIONS

Traffic may shift from rail to truck, should the RTAC recommendations be put in place.* CN has estimated their traffic losses expected to result from the 19 metre (53 foot) trailer configuration will, in the first round of impacts, reduce rail revenue by 25 percent throughout the system. According to CN, the second round of impacts resulting from upward movement of rail rates due to traffic losses initially attributable to implementation of the larger vehicles will result in further losses of 20 percent of revenue. The second round of impacts is largely a result of losses of container traffic to and from Halifax that CN anticipates will be significantly affected as rates rise to offset the impacts of the RTAC proposals. A consultant's report on the impact of RTAC proposals on the Halifax container traffic** concluded that CN's estimate of the impacts were excessive. The report suggested that, while variable costs for the container movement would increase, the magnitude of increase would be in the order of 5 percent rather than the 15-16 percent increase estimated by CN. Therefore, CN's estimate of second-round impacts in the order of 20 percent of revenue may be higher than what would result if freight rates increased in direct proportion to CN's estimated increase in variable costs.

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* For purposes of this study, it is assumed the original RTAC proposal is implemented. The Memorandum of Understanding signed by the Ministers in February 1988 adopted standards less than originally proposed.

**Peat Marwick, Halifax Load Centre Cost Analysis, April 1988.

The present study accepts CN's estimate of 20 percent second-round impacts although, as noted, other studies on this issue suggest that this may overstate the impact.

The magnitude of these first and second round of impacts are expressed for the entire system, although CN has publicly stated that the impacts will be greatest in the Atlantic Region. In a study undertaken on behalf of RTAC,* IBI concluded that CN's analysis was basically logical and that such an impact as claimed by CN was entirely possible. These estimates have been accepted for purposes of this study.

CN has stated in its public submissions on the issue of the RTAC vehicle weights and dimensions proposals that 14.6 million tonnes of freight are handled in the Atlantic Region annually. The estimated 1.4 million tonnes of traffic originating and terminating in the Truro-Sydney line therefore represents about 9 percent of the region's traffic tonnage and 13 percent of Nova Scotian traffic.

CN's revenue generated from the Atlantic Region is not public information. Revenues from traffic originating and terminating in Nova Scotia is publicly available for all Class I railways. It is, however, impossible to assign revenue proportions between the Class I carriers properly without CN revenue data. In the IBI report prepared for RTAC, CN is reported to have claimed that the RTAC proposals will reduce CN's revenues in the

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*IBI Group, Economic Issues Related to the Proposed Changes in Vehicle Weights and Dimensions Regulations for Interprovincial Trucking, December 1987.

Maritime Provinces by 45 percent (including primary and secondary impacts), or $70.1 million.* Total revenues are therefore estimated by the consultants to be $155.8 million.

The consultants are unable to verify if a direct relationship exists between revenues and tonnages for CN traffic. It is possible that 25 percent of the traffic represents 25 percent of revenue generation for CN, although verification would have been useful in this analysis. However, because information was not available to carry out such a verification, the following analysis is based on direct weighting of tonnages to revenues.

For the purposes of this analysis, CN's system estimates of impacts are utilized; however, it is worth noting that this impact represents, from CN's evaluation, the minimum impact to be expected in their Atlantic Region. The analysis is based on the first round of impacts of 25 percent loss of tonnage and corresponding revenue and the second-round impacts of 20 percent.

11.4 IMPACT OF TRAFFIC LOSSES ON RAIL FREIGHT

The survey data utilized in this analysis of rail cost and rate relationships represents 1.4 million tonnes of freight originating and terminating on the Truro-Sydney line, excluding bridge traffic. This traffic generates about $30.0 million annually in rail freight revenues. Overall, the contribution of this traffic to CN is estimated at $11.0 million.

The consultants have estimated that about 40-50 percent of the contribution from the Truro-Sydney traffic is allocated to the operation and maintenance of the Truro-Sydney line. Closure of the Sydney-Truro line will, as a result, provide a saving of some $4.4 million to $5.5 million now reflected in constant costs that are by nature not allocated to any specific traffic type or commodity. In addition, long-run variable costs will cease to be incurred over time. The balance of the contribution generated by shippers on the Sydney-Truro line for allocation to the remaining system is estimated to be in the order of $5.5 million to $6.6 million. This is the amount of contribution utilized to support the Atlantic rail system and the national operations of CN. It is this amount that CN will be required to generate from other sources to recover its constant costs.

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*IBI Group, Economic Issues Related to the Proposed Changes in Vehicle Weights and Dimensions Regulations for Interprovincial Trucking, December 1987 - p.3-6.

Not all of this contribution will be lost to the railway strictly as a result of rail line closure, as pointed out above. Transportation decisions and future plant operating decisions are ongoing, and the consultants are aware of some key developments that are expected to occur in the early 1990s.

These decisions will impact the railway contributions to constant costs, as rail movements such as coal between Sydney and Trenton and paper products outbound from Scott Maritimes Ltd. will likely be discontinued. These two movements account for almost $2.0 million in contribution. This loss of contribution cannot be attributable to closure of the line specifically, although it may be related to normal service constraints imposed on shippers on light-density lines and the offering of more attractive alternatives.

Assuming rail service continues on the line and the RTAC proposals are implemented, a 25 percent impact on the current 1.4 million tonnes of freight now moving on the line is equal to 340,000 tonnes. Of the $11.0 million total contribution from the line, 25 percent, or $2.75 million, could be considered contribution to constant costs lost as a result of the RTAC proposals. Applying the same ratio of allocation of contribution to constant costs to the Sydney-Truro line as exists for the rest of the system, 40 percent of the contribution would be allocated to support local rail operations, and 60 percent, or $1.5 million, would be allocated to the entire system requirements.

The foregoing is summarized as follows:

Issue	Current Contribution from the Freight Rate Truro-Sydney Line (millions)	Contribution to be Recovered by Other Traffic due to Issues Noted (millions)
RTAC: Stage I	$ 2.75	$1.5
Stage II	$ 2.0	$1.2
Business Options	$ 2.0	$1.2
TOTAL TRAFFIC	$11.0	$6.6

The effect of the loss of contribution arising from the three separate factors can be easily demonstrated. The following describes the effects if the line was abandoned and $6.6 million was the outstanding amount to be recovered from increases in the freight rates of all CN shippers in the Atlantic Region. The following table shows the current situation (Situation 1) in the CN Atlantic Region, as identified by the consultants. Situation 2 provides the worst-case scenario which would arise if the Truro-Sydney line closed, and all impacts resulting from other factors such as RTAC vehicle weights and dimensions recommendations and corporate transportation decision-making are included as impacts resulting from abandonment. The impact on regional tonnage and revenue is identified in the table and the outstanding contribution to be generated from the remaining source. If tonnage and revenues in the Atlantic Region were maintained at current levels, shippers as a group would be subject to 5.2 percent increase in freight rates. Situation 3 describes the results of the corporate decisions that are likely to be made by rail shippers on the Truro-Sydney line. Under this scenario, the net outstanding contribution to be recovered from other shippers is estimated at $1.2 million. Situation 4 deals with the RTAC recommendations, specifically for the Stage I (primary) and Stage II (secondary) impacts. The net outstanding contribution is identified only for shipments currently originating or terminating on the Truro-Sydney line.

SCENARIOS:	Situation 1	Situation 2	Situation 3	Situation 4	
CN Atlantic Region	Pre-Line Closure	Post-Line* Closure	Post Industry* Decisions	Post RTAC* Stage I	Post RTA Stage II
Regional Tonnage (millions of tonnes)	14.6	13.1	13.8	10.9	8.0
Regional Revenue (millions)	$155.8	$125.8	$143.3	$116.9	$85.7
Net Outstanding Contribution (millions) from Current Truro-Sydney Traffic	--	$ 6.6	$ 1.2	$ 1.5	$ 1.2
Total Revenue Required	$155.8	$132.4	$144.5	$118.4	$86.9
Net Increase in Freight Rate Required	--	5.2%	0.8%	1.3%	1.4%

*Impacts of each scenario shown are to be evaluated separately from other scenario impacts. Net increase in freight rates is that required to offset lost contribution from Sydney-Truro traffic only.

This table indicates that closure of the Truro-Sydney line will create a net outstanding contribution of $6.6 million. The total regional revenue requirements equal regional revenue plus the net outstanding contribution. The required revenue levels assume that the current levels can sustain the system, although it may be inappropriate to arbitrarily conclude that this would, in fact, be so. The outstanding revenue, represented as a proportional increase in freight rates in the region, is then calculated. It was determined that a 5.2 percent increase would be required of CN's Atlantic Region shippers to offset the effects of the closure of the Truro-Sydney line.

The effect of the closure of the Truro-Sydney line could also have been demonstrated as an impact for all shippers in Canada. Such an approach would result in a very small percentage increase in freight rates for all shippers. This would occur because the recovery of an additional $6.6 million in revenue from all CN Rail's freight traffic base generating $3.7 billion in 1987* would require a freight rate increase of 0.0018 percent on all traffic. Although rail costing methodologies are based on rail system costs, pricing strategies tend to reflect a set of influences including regional pecularities in the market-place. The consultants believe that understanding the magnitude of the impact in the Atlantic Region is significant for policymakers.

The pressure for the 5.2 percent rate increase in the Atlantic Region can be mitigated by two factors. First, as indicated in Chapter 7, the rerouting of Newfoundland traffic to Halifax from North Sydney would offset this pressure. Secondly, users of the Halifax-Truro-Moncton main line indicated their overall use of the line, in terms of tonnage, would increase by 28 percent over the next five years. While much of this increase was projected for low-cost bulk commodities which have lower revenue-producing potential per tonne carried, such an increase would nevertheless mitigate the need for the rate increase calculated.

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*Canadian National Railways, Annual Report, 1987.

It is noted that the prospect of increasing rates is not something totally within the control of the railways. To state they can increase rates by some percent (such as 5 percent) suggests rates can be altered at will with no effect on traffic levels and modal split. Clearly, if this were the case, rates would have already been increased. Therefore, reduced profitability is more likely to be the outcome for the rail company. If, however, the railway were to increase their rates by 5 percent, one would expect traffic changes to other modes and possibly reduce market penetration for other products, resulting in reduced volumes being shipped by rail. This initiates a downward spiral as the reduced volume triggers the need for another price increase as the railway attempts to retain its relative profitability.

It should be recognized that contribution to fixed costs cannot be isolated to a single line; therefore, the loss of traffic on a single line actually has a widespread effect as it becomes a responsibility for all remaining traffic in the railway system, not just traffic on that and adjacent lines.

11.5 IMPLICATIONS OF EXTENDING THE LASER SERVICE

In 1987, CN introduced its Montreal/Toronto/Chicago-Moncton Laser Train Service. The service provides second-morning delivery of piggyback trailers on a daily basis. The building of trains in Moncton is achieved by drawing trailers from the region including traffic from Prince Edward Island, New Brunswick and Nova Scotia.

The service has proven popular, operating at or near capacity most of the time (100 trailers per day). Results of the shipper survey indicate this service is popular with shippers and has attracted traffic from the road back to rail. The service enhances CN's ability to compete with over-the-road trucking by providing fast door-to-door service at competitive rates.

CN has indicated it is now considering adding another train to the daily service. The train schedules would likely be staggered to provide service every 12 hours. The possibility exists that the train portion of the service would be extended to Halifax if a second train is added and usage of the service continues to increase. However, there will be little change in the overall level of service to the user from the Halifax area. Truck haul from Halifax to Moncton currently takes three hours, as does rail service. Hence, extending train service to Halifax would not improve service levels from that perspective. Addition of the second train per day, whether to Moncton or eventually to Halifax, would improve service frequency which should promote usage of the service. Given there will be little improvement in user service levels by extending the service to Halifax, CN indicates the decision to develop a load centre in Halifax depends upon the savings generated by reduced truck haul from Halifax to Moncton compared to the costs to develop the centre.

Should it prove economical to develop a load centre at Halifax, the overall economics of operating the main line service between Moncton and Halifax will be correspondingly improved with additional revenue accruing to CN's rail operations.

12.0 SUMMARY AND CONCLUSIONS

12.1 COMPARISON OF MODAL SHARES

Data compiled by Statistics Canada provides important indicators of the relative positions of the truck and rail transport industries in Nova Scotia.

In terms of volume of freight moved, Nova Scotia's trucking industry recorded rapid increases over the past decade, primarily due to growth within the service sector of the economy, while the volume of freight moved by rail has remained relatively unchanged. Both modes of transportation have been able to reduce their rates (on a constant dollar basis), with the trucking industry achieving the greatest reductions.

Rail currently accounts for approximately 60% of tonnage moved to, from and within Nova Scotia, while trucking accounts for 60% of total revenues. This reflects the fact that trucks are more likely to move higher revenue products due to their speed, flexibility and convenience, while rail movements consist of lower revenue bulk commodities, such as coal or gypsum.

Today, trucking accounts for virtually all freight moved within the province, The exception is crude products, where truck transport still accounts for approximately one half of the market on a revenue basis. This demonstrates truck transport can be competitive with rail on short-haul bulk movements.

For freight movements to and from the province, trucking predominates in the movement of food products and end products, while accounting for one-half of the market share in fabricated materials and crude products. This means that truck and rail are successfully competing over a wide range of products and haul distances, a fact generally confirmed by the costing analysis undertaken as part of the study, and the shipper/-receiver survey results.

While total rail traffic in Nova Scotia has generally remained steady over the past decade, traffic on the Truro-Sydney line has declined by 25 percent over the past 5 years while traffic on the Moncton-Halifax line has increased by a similar percentage. Closure of the Newfoundland rail service in September 1988, has further increased traffic levels on the Truro-Halifax line, while decreasing traffic on the Truro-Sydney line.

12.2 SHIPPER/RECEIVER SURVEY

A comprehensive shipper/receiver survey involving 62 respondents was conducted to determine the importance of rail service to Nova Scotia and the implications that rail line closure would have on companies using these services.

Overall, two-thirds of the companies responding did not have any major problems with rail transportation services and rates. The other third reported problems with damage, disruptions and delays in transit, slow/poor service and equipment availability.

Nearly two-thirds of the companies responding felt that direct rail service was highly important (25%), or indispensable (40%), to their operations. Very few companies must rely exclusively on rail service due to the physical characteristics of their products; most use direct rail service due to the volumes shipped or distances involved. These companies consider rail to be highly important or indispensable for their operations. Shipping lines, automotive product companies and building material supply firms indicated the greatest degree of dependence upon direct rail service and would be the firms most adversely affected by the loss of this service.

Twenty-five companies (40%) indicated they would respond to a loss of direct rail service by switching to another mode. While trucking was the mode most frequently mentioned, several companies indicated they would ship by water. Eight companies (13%) indicated they would have to undergo a change in products or markets while eleven companies (18%) indicated a major change in company logistics would be required. Eleven companies (18%) indicated they would have to move out of Nova Scotia or go out of business. These were, as one would expect, companies who rated rail services as indispensable, with most shipping products through the Port of Halifax. Six companies (10%) indicated loss of direct rail service would have no affect on their operations. The remaining company did not respond to this question.

12.3 CLOSURE OF TRURO-SYDNEY AND EAST RIVER-HALIFAX LINES

The impact that closure of the Truro-Sydney and the East River-Halifax lines would have on current users of these lines was examined in some detail. In total, nine identified regular users would be affected. The loss of direct rail car service would require most of these companies to dramatically change their distribution patterns in order to continue operation.

The study team has considered alternatives for these nine companies:

- A short-line railway operation could serve the two companies with coal and gypsum movements on Cape Breton Island.
- Three companies could move their products to market by water instead of rail. This would require establishing appropriate warehousing and distribution systems and increased investment in loading/receiving facilities. Overall, annual transport costs for most commodities

would not be increased; however, transport cost increases could adversely affect some minor markets.

These same companies would also experience increased costs to truck their inputs to the plant; however, these increases are small in comparison to the companies' total operations and would, in our opinion, likely be absorbed by the companies involved.

Obtaining appropriate equipment might be a barrier for two of the companies. One company would require specialized road transport equipment, which is available in Canada. The other would require marine transport equipment, which is not readily available in Canada and could be particularly difficult to acquire.

- Four companies could switch to either truck or some form of truck/rail combination (i.e. piggyback or transhipment) for their inbound and outbound movements. Increased transport costs would result, along with partial loss of some markets. In one case, specialized equipment would be required to move the product by road. This equipment is available in Canada.

The desire and ability of each company to make the necessary changes depends to a large degree upon market conditions at the time. Provided the changes are made, there should not be any major reductions in employment levels or plant closures.

Loss of rail service between Truro and Sydney would mean that companies dependent upon direct rail car service would not consider this area as a potential location for their facilities. While the importance of direct rail car service may diminish in the future, the loss of this service does, nevertheless, mean the loss of an important regional development tool.

12.4 EFFECTS OF CHANGES TO PEI'S TRANSPORTATION SYSTEM

Two major changes to PEI's transportation system are currently being considered. One is the construction of a fixed link between PEI and the mainland. The second is the impending closure of direct rail service between the mainland and the province. The implications these potential changes hold for Nova Scotia's road and rail systems were reviewed.

A study by Public Works Canada determined that the fixed link would result in minor savings in construction and maintenance costs of Nova Scotia's road system. These savings would occur mainly on the highway from Truro to Caribou where traffic to the existing ferry was predicted to decrease once the fixed link was in place.

Due to the limited quantities of goods moving by rail between Nova Scotia and PEI, loss of direct rail service between PEI and the mainline would have little effect on Nova Scotia. Using 1984 rail traffic data (the latest available), it was determined that 80 additional one-way truck movements would occur between the two provinces per year with rail line closure. The impact of this traffic on roadway capacity and pavement life would be negligible.

12.5 EFFECTS OF NEWFOUNDLAND RAILWAY CLOSURE

On September 30, 1988, the Newfoundland Railway service was discontinued with freight moving by marine and truck transport instead. This change follows an agreement between the Province of Newfoundland and the Government of Canada, dated June 20, 1988. This has changed the dynamics of freight movements to Newfoundland.

Although rates on rail freight shipments to Newfoundland will continue to be calculated on the basis of the Terms of Union, many route and mode alternatives exist for Newfoundland traffic. These include, for example, container service from Montreal and Halifax to Corner Brook and St. John's, as well as the previous North Sydney to Port-Aux-Basques alternative. In this new environment, traffic routing will depend on the total transportation costs and the physical distribution logistics associated with container and trailer movements. Available alternate routings are expected to attract as much as 70% of the Newfoundland rail traffic previously moving over North Sydney.

This shift is substantially complete and will seriously jeopardize the economics of the Truro-Sydney line. Provided the bulk of this shift continues to move by rail through Halifax, the economic position of the Truro-Halifax line will be significantly improved, offsetting approximately two-thirds of the rate increase suggested by the loss of other rail freight traffic from the Truro to Sydney line.

12.6 COSTING ANALYSIS

Railway costing analysis was undertaken for traffic moving over the Truro-Sydney line using the consultants' rail costing model and the shipper survey results. The analysis included traffic originating and terminating on the line, bridge traffic to and from Newfoundland, and VIA service in Nova Scotia. The purpose of the analysis was to identify the revenue and, to the extent possible, the cost implications for remaining shippers.

Overall, it is our assessment that rail freight rates for traffic originating and terminating on the Sydney-Truro line are compensatory, meeting the regulatory requirements improsed on the railways. In addition, the costing analyses indicate the shippers are providing modest contributions to CN's constant costs.

Given the economic conditions of the region, and the costs of overcoming distance both in assembling industrial inputs and accessing markets for outputs, these results are reasonable. These conclusions tend to support claims by CN that freight rates in the Atlantic region are not particularly remunerative.

The results are significant to the region for two reasons. First, the lower freight densities achieved on lines in the Maritimes means each shipment bears a greater responsibility to ensure the freight rate supports the operation and maintenance of the line. Therefore, shippers as a whole may be subject to higher freight rates than if they were operating in a region with denser rail traffic patterns. Second, each individual shipper bears a significantly larger responsibility for ensuring that traffic levels are sustained to assure the ongoing operation of the line in an economically feasible manner. In such circumstances, loss of even minor portions of the total traffic becomes significant.

It is estimated that closing the Truro-Sydney line would represent a net loss of $6.6 million to CN. In addition, payment by VIA to CN (which would disappear if the VIA service in Nova Scotia was discontinued) includes an estimated $2.3 million[1] of cost reimbursement, which could not be avoided by CN in the short run after VIA ceases operation. CN would, in the short term, attempt to offset these losses with revenue from higher tariffs.

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[1] This is the amout accruing from all VIA services in Nova Scotia. The Halifax-Sydney service represents about 45% of this amount.

Represented as a percentage for the Atlantic Region, the CN freight rate increases required to offset the revenue decrease of $6.6 million from the lost rail freight is 5.2%. A further 1.5% increase would be required to offset the loss of VIA service in Nova Scotia. Should only the rail passenger service between Halifax and Sydney be discontinued, the resultant increase would be approximately 0.7%

The other traffic reviewed in this context was the rail bridge traffic to and from Newfoundland. The consultants have estimated that the re-routing of this traffic over Halifax could offset the above increases by at least two-thirds. The net increase to CN shippers in the Atlantic Region would be in the order of 2%. This increase could, however, be distributed over all CN's clients and not just those in the Atlantic Region.

12.7 OVERALL ASSESSMENT

Truck traffic in Nova Scotia has increased rapidly in recent years due primarily to the growth in the economy's service sector, which is more economically and efficiently served by the truck transport. Comparison of truck and rail rates through the consultants' costing models confirmed these modes are competitive over a considerable range of commodities and distances. The marine mode is also competitive with rail for a number of products.

Nevertheless, direct rail car service is considered to be highly important or indispensable to the majority of its users. This service is absolutely vital to the movement of containers and other products through the Port of Halifax to and from central Canada.

The effects of closing the Truro-Sydney line were investigated in some detail. While contributing to constant costs, the line is not particularly remunerative to CN due primarily to its traffic density. Any further decreases in traffic volumes on this line would significantly decrease these contributions and reduce the economic viability of the line. Should this line be closed, existing users would be required to successfully make dramatic changes in their distribution patterns in order to continue operations. As well, investment in shipping/receiving facilities would be required and product mixes altered. Some loss of markets could also result. In addition, an important regional development tool would be lost.

Loss of the Truro-Sydney line and VIA Rail service in Nova Scotia would increase pressure to raise rates elsewhere in CN's system to recover the lost revenues. If these lost revenues are to be gained from Atlantic Region shippers only, tariff increases of approximately 6.7% are required to offset these losses. Given the competitive nature of much of this traffic, such an increase would not be possible without further traffic switching from rail. The traffic that would not find it economical to switch to another mode would therefore be subject to rate increases greater than 7%.

While the determination and detailed investigation of the consequences of such an increase are beyond the Terms of Reference for this study, it is our opinion that much of the traffic on this line could not sustain such increases. This would result in market losses and reduced economic development potential for Nova Scotia. However, rerouting of the Newfoundland traffic over Halifax, combined with improved efficiencies resulting from the traffic increase on the rail line from Truro to Halifax, could offset the above increases by approximately two-thirds. The net increase to CN shippers in the Atlantic Region would therefore be in the order of 2% which is approximately one-half of the annual rate increases experienced in recent years, and is therefore not considered a significant increase.

APPENDIX A

SELECTED HISTORICAL DATA ON TRUCK AND RAIL TRANSPORT - NOVA SCOTIA

APPENDIX A-1

NOVA SCOTIA - ANNUAL TONNES OF FREIGHT MOVED BY RAIL (1976 TO 1984)

	Tonnes Transported (000's)			
Year	Within	To	From	Total
1976	4111	1323	1237	6671
1977	4795	1265	1190	7250
1978	5174	1348	1253	7775
1979	3583	1305	3180	8068
1980	3326	1269	2707	7302
1981	3478	1406	2441	7325
1982	2925	1217	1987	6129
1983	3938	1272	2165	7375
1984	4086	1429	2432	7947
% Change 1976-1984	-1%	+8%	+97%	+19%

Source: Statistics Canada Cat. No. 52-214

APPENDIX A-2

NOVA SCOTIA - ANNUAL REVENUES FOR RAIL FREIGHT MOVEMENTS ($000s)

	Within	To	From	Total
1976	8,130	53,007	26,061	87,198
1977	8,716	55,525	24,348	88,316
1978	9,361	59,965	28,101	97,427
1979	9,353	64,227	41,333	114,913
1980	9,311	68,030	39,552	116,893
1981	10,217	79,774	39,522	129,513
1982	9,394	71,131	34,191	114,716
1983	12,641	78,765	38,742	130,148
1984	12,201 (6,273)	93,505 (48,074)	47,022 (24,175)	152,728 (78,523)
% Change 1976-1984	+50.1% (-23%)	+76.4% (-9.5%)	+80% (-7.2%)	+74.7% (-10%)

NOTE: Numbers in parenthesis are expressed in 1976$.
1986 prices deflated using the Consumer Price Index.

Source: Statistics Canada Cat. No. 52-214

APPENDIX A-3

COMMODITY BREAKDOWN OF RAIL TRAFFIC BY MAJOR COMMODITY GROUP, 1981 TO 1984

Commodity Group	Year	Tonnes Transported (000's) Within	From	To
Food, Feed Beverage	1981	7.4	16.7	543.8
	1982	9.8	18.8	537.4
	1983	6.9	16.9	487.8
	1984	7.8	24.9	532.6
Crude Materials, Inedible (includes coal and gypsum)	1981	3261	1614	66.4
	1982	2768	1413	46.2
	1983	3821	1577	57.4
	1984	3980	1665	53.2
Fabricated Materials, Inedible	1981	187.7	603.4	454.7
	1982	139.3	400.6	345.4
	1983	101.9	417.9	395.5
	1984	92.5	571.8	482.8
End Products, Inedible	1981	13.3	132.1	135.7
	1982	0.9	80.6	83.4
	1983	0.2	71.4	94.2
	1984	1.5	65.5	115.7

Source: Statistics Canada Cat. No. 52-214

APPENDIX A-4

NOVA SCOTIA - RAIL REVENUE BREAKDOWN BY COMMODITY ($000s)

		Within	To	From	Total
Food, Feed Beverage	1981	103	20,359	930	21,392
	1982	117	19,770	1,055	20,942
	1983	108	19,284	1,080	20,472
	1984	118	23,436	1,399	24,953
Crude Materials, Inedible	1981	8,111	2,974	6,008	17,093
	1982	7,688	2,490	5,016	15,194
	1983	11,250	3,206	5,969	20,425
	1984	10,888	3,035	6,543	20,466
Fabricated Materials, Inedible	1981	1,651	25,219	17,179	44,049
	1982	1,252	21,583	13,310	36,145
	1983	1,005	24,150	15,244	40,399
	1984	968	29,815	19,607	50,390
End Products, Inedible	1981	127	16,020	10,270	26,417
	1982	43	11,694	9,548	21,285
	1983	5	13,858	9,897	23,760
	1984	69	16,854	11,299	28,222

Source: Statistics Canada Cat. No. 52-214

APPENDIX A-5

RAIL FREIGHT MOVEMENTS - BREAKDOWN BY MAJOR COMMODITY GROUPING*

Commodity Group	Year	Tonnes	(% of total tonnage for year)	Revenues	(% of total revenues for year)
Food, Feed Beverage	1981	567.9	(8.1)	21,392	(19.6)
	1984	565.3	(7.4)	24,953	(20.1)
Crude Materials	1981	4941.4	(70.2)	17,093	(15.7)
	1984	5698.2	(75.0)	20,466	(16.5)
Fabricated Materials	1981	1245.8	(17.7)	44,049	(40.4)
	1984	1147.1	(15.1)	50,390	(40.6)
End Products, Inedible	1981	281.1	(4.0)	26,417	(24.2)
	1984	182.7	(2.4)	28,222	(22.8)
Total	1981	7036.2	(100.0)	108,951	(100.0)
	1984	7593.3	(100.0)	124,031	(100.0)

*Includes shipments to, from and within Nova Scotia. Does not include Devco's rail movements.

APPENDIX A-6

FREIGHT TRAFFIC INDEX BY SUBDIVISION
(1983 = 100)

Subdivision	Index Value for Year Indicated				
	1983	1984	1985	1986	1987
Sydney	1.00	1.00	0.88	0.83	0.73
Hopewell	1.00	1.00	0.89	0.84	0.76
Oxford	1.00	1.13	1.07	0.99	2.84
Dartmouth	1.00	1.04	1.20	1.04	1.15
Chester	1.00	1.13	0.88	1.06	0.93
Bedford	1.00	1.21	1.18	1.21	1.26
Springhill	1.00	1.19	1.17	1.18	1.21

(Based on gross ton-miles)

NOTE: Larger increases are based on smaller volumes of freight. Smaller percentage increases could have been much larger when measured in absolute terms (i.e., total tonnes).

Source: CN Rail

APPENDIX A-7

NOVA SCOTIA - ANNUAL TONNES OF FREIGHT MOVED BY FOR-HIRE TRUCK (1976 TO 1986)

	Tonnes Transported (000's)			
Year	Within	To	From	Total
1976	2360	652	537	3549
1977	2616	778	625	4019
1978	2404	707	524	3635
1979	2157	1105	782	4044
1980	3607	928	807	5342
1981	3835	997	887	5719
1982	3379	1124	794	5297
1983	3028	1069	802	4899
1984	3639	1089	853	5581
1985	3845	1138	880	6863
1986	3892	1343	1133	6368
% Change 1976-1986	+65%	+100%	+111%	+79%

Source: Statistics Canada Cat. No. 53-222

APPENDIX A-8

NOVA SCOTIA - REVENUES EARNED BY FOR-HIRE TRUCKING (000s $)

Year	Within		To		From		Total
1976	25,968		44,938		22,764		93,670
1977	24,923		44,695		24,667		94,285
1978	28,266		48,328		23,817		100,411
1979	29,847		67,460		35,391		132,698
1980	49,018		68,187		38,767		155,972
1981	48,758		89,846		48,028		187,632
1982	47,186		100,289		46,474		193,949
1983	46,760		104,422		50,706		201,888
1984	54,728	(28,138)	111,561	(57,358)	51,654	(26,557)	217,943
1985	62,130		120,122		58,787		241,639
1986	61,788	(29,339)	124,144	(58,948)	64,487	(30,620)	250,419
Change '76-'86	+58.0%	(+13%)	+63.8%	(+31.2%)	+64.7%	(+36%)	+62.6%

NOTE: Numbers in parenthesis express revenues in 1976 dollars. Revenues were deflated using Consumer Price Index.

Source: Statistics Canada Cat. No. 53-222 (1976-80)
(1984-86)
53-224 (1981-83)

APPENDIX A-9

TONNAGE AND REVENUES BY MAJOR COMMODITY GROUP - FOR-HIRE TRUCKING

	(From Nova Scotia)		(To Nova Scotia)		(Within Nova Scotia)	
	Revenue (000s$)	Tonnes	Revenue (000s$)	Tonnes	Revenue (000s$)	Tonnes
od Feed, verage	17,083 (27.3%)	275,936 (24.7%)	31,414 (26.6%)	457,623 (35.1%)	15,267 (25.6%)	588,452 (15.3%)
ude Materials, edible	4,422 (7.1%)	152,169 (13.6%)	3,334 (2.8%)	62,354 (4.8%)	12,710 (21.3%)	1,550,537 (40.4%)
bricated terials, edible	15,090 (24.1%)	544,390 (48.7%)	35,011 (29.6%)	523,960 (40.1%)	18,114 (30.4%)	1,380,196 (36.0%)
l Products, edible	25,912 (41.5%)	146,144 (13.1%)	48,471 (41.0%)	261,286 (20.0%)	13,509 (22.7%)	317,323 (8.2%)
AL	62,507	1,118,639	118,230	1,305,223	59,600	3,836,508

NOTE: Percentages in parenthesis are percent of column total for the four commodity groups listed.

ırce: Statistics Canada, Special Tabulation from 1986 For-Hire Trucking Survey prepared for ADI Limited

APPENDIX A-10

REVENUES BY PROVINCE OF ORIGIN AND DESTINATION - NOVA SCOTIA FOR-HIRE TRUCKING (CLASS I, II AND III CARRIERS)

Revenue (000s $)

	1986		1981	
	From Nova Scotia	To Nova Scotia	From Nova Scotia	To Nova Scotia
Newfoundland	8,167	2,808	7,591	3,332
Prince Edward Island	4,767	1,776	2,777	1,158
New Brunswick	19,519	33,131	15,684	22,188
Quebec	8,730	31,288	5,237	21,550
Ontario	15,574	45,818	13,378	34,346
Manitoba	1,735	3,848	471	1,537
Saskatchewan	729	1,378	406	425
Alberta	3,332	2,087	2,536	1,825
British Columbia	1,912	1,963	1,444	3,484
Yukon	8	-	1	-
Northwest Territories	14	48	3	-
TOTAL	64,487	124,144	49,028	89,846

Source: Statistics Canada Cat. No. 53-222 (1986)
53-224 (1981)

APPENDIX A-11

VOLUMES MOVED BY PRIVATE TRUCKING
(000s tonnes)

Year	Within Province	To Province	From Province	Total
1986	3200	320	221	3741
1985	2893	335	228	3456

Source: Statistics Canada Cat. No. 53-222

APPENDIX B

NOVA SCOTIA ECONOMIC TRENDS

APPENDIX B

NOVA SCOTIA ECONOMIC TRENDS

The Nova Scotia economy can generally be described as a mature economy. Nova Scotia economy is stable in terms of population growth, employment and sectoral change.

The population of Nova Scotia has experienced slow, steady growth over the last two decades. The 1986 population of 873,190 is up 3 percent over the 1981 population. The average age of the Nova Scotia population is also increasing.

Provincial gross domestic product and employment growth have experienced slow but steady growth over the past twenty years. Employment growth has averaged 2.1 percent of per annum over this period and real gross domestic product has averaged 3.5 percent per annum.

The service sector is the fastest growing sector in the Nova Scotia economy. Twenty years ago it accounted for 45 percent of total Nova Scotia employment. Today it accounts for over 65 percent of total employment. This trend is consistent with the maturing of an economy, where we see less reliance on the resource and manufacturing sectors.

SECTOR OVERVIEW

Table 1 provides a breakdown of gross domestic product by industry from 1983-1987. From this table we see that, with a few exceptions, the various industries have experienced moderate growth over the last few years. The exceptions include mining, which has experienced declines; community, business and personal services which have not experienced any real growth; and public administration and defense which also has not grown.

TABLE 1

GROSS DOMESTIC PRODUCT BY INDUSTRY, NOVA SCOTIA 1983-1987

Industry	1983	1984	1985	1986	1987^{P}
Agriculture	126	133	130	130	139
Forestry	33	50	62	64	48
Fishing	159	146	155	194	204
Mining	240	227	204	302	191
Manufacturing	929	1,150	1,177	1,172	1,175
Construction	876	851	963	1,027	1,038
Utilities	177	193	204	208	221
Goods Producing	2,540	2,749	2,895	3,097	3,017
Transportation and Communication	663	696	713	725	757
Wholesale and Retail Trade	941	1,051	1,147	1,159	1,233
Finance, Insurance and Real Estate	1,141	1,217	1,313	1,375	1,483
Community, Business and Personal Service	1,592	1,638	1,645	1,706	1,671
Public Administration and Defense	1,232	1,260	1,264	1,263	1,271
Service Producing	5,568	5,861	6,082	6,227	6,417
ALL INDUSTRIES	8,108	8,610	8,977	9,324	9,434

^{P}Preliminary Estimate

SOURCE: Conference Board of Canada

Following is a brief look at the performance of the industries that are either major rail customers or particularly reliant on rail transportation.

PULP AND PAPER INDUSTRY

The Nova Scotia pulp and paper industry is both a major sector of the Nova Scotia economy and a major user of the railway.

Production levels have varied significantly from one year to the next, depending on market opportunities. However, since 1983, the industry has seen a steady increase in production as new capacity has been added and modernization programs implemented. (See Nova Scotia Statistical Review, August 1988, p.29.) However, the present situation is that markets are extremely competitive and that recent additions in worldwide pulp and paper capacity have exceeded the market growth. The implications for the Nova Scotia industry are that substantial increases in markets are unlikely, but Nova Scotia should be able to retain its market share, provided it does not experience significant cost increases.

MINERAL SECTOR

Based on value of production, the major mineral products are coal, gypsum, cement, stone, and sand and gravel. In terms of gross tonnage for the railway, gypsum and coal are the most significant. In 1984 (most recent data available), the railway carried over 5 million tonnes of gypsum and 372,000 tonnes of coal. The other commodities primarily rely on truck transport to serve their markets.

Nova Scotia gypsum production has increased by 20 percent over the period 1981-1987. The major market for Nova Scotia gypsum is wallboard plants in the United States. Thus, demand is very dependent upon construction activity. Based on the generally positive outlook for the United States economy and the results of our survey of producers, we should generally see a continuation of present production levels or modest growth.

Coal shipments by rail are primarily related to Nova Scotia Power Corporation electrical generation requirements. These requirements have increased over the last decade as Nova Scotia Power Corporation converts from oil-fired generation to coal-fired generation. In addition, N.S.P.C. is seeking export markets for electricity which will further increase the demand for coal. However, in terms of rail traffic, the present traffic levels of 550,000 tonnes (Devco coal to Point Tupper and Trenton) are expected to remain constant over the next few years. Current expansion plans for N.S.P.C. include a new plant at Sheet Harbour and increased capacity at Trenton and Point Tupper. However, the Sheet Harbour plant is not served by rail and would likely use water transport. Beginning in 1991, Trenton will require 700,000 tonnes but will be supplied by a new local mine located 5 miles from the plant. Devco's loss of market at Trenton will be made up by an increase in coal requirements at Point Tupper as this power plant's capacity is increased. CN will likely see a loss of revenue as all Devco coal will be going to Point Tupper instead of half the production going to Trenton and half to Point Tupper.

APPENDIX C

INTERVIEW GUIDE

IMPLICATIONS OF CHANGES IN RAIL SERVICE ON DEVELOPMENT IN NOVA SCOTIA

1.0 GENERAL INFORMATION

Company/Organization: NAME ______________________________

ADDRESS ______________________________

____

____

CONTACT PERSON ______________________________

TITLE ______________________________

FACSIMILE ______________________________

CONFIDENTIAL WHEN COMPLETED

Results will be aggregated with all other interviews for summary purposes. The questionnaire concerns freight moved to, from, and within Nova Scotia.

2.0 Please indicate your present shipping requirements for both inbound and outbound freight. Record only those commodity movements that are into or out of Nova Scotia.

Commodity	Movement		Mode of Transport Used [1]	Current Annual Volume By Mode (tonnes)	Typical Shipment Size (Tonnes)	Transport Rate Per Unit[2]	Price of Commodity at Plant Per Unit[2]	If you didn't use the mode is there another mode you c	
	From	To						Other Mode	Reason For Us
Inbound (To Plant)									
Outbound (From Plant)									

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[1] When the same commodity moves between the same two points by more than one mode,please list each mode separately (e.g. a commodity moving from Montreal to Halifax either truck or rail would be listed twice, once describing the truck movement, and once describing the rail movement.

2. Please be specific with respect to type of units used. Also please provide an indicator of the average number of tonnes per unit (i.e. tonnes per container).

3.0 (a) Please indicate the primary reason(s) for selecting the mode of transport you use for each of your commodity movements (cost, speed of delivery, equipment availability loss/damage control, special nature of goods, etc). If the same movement occurs by more than one mode, please re-list that commodity for each mode used.

Commodity	Movement From/To	Mode of Transport	Primary Reasons for Selecting Mode Used (maximum of three for each movement)		
Inbound (To Plant)					
			1	2	3
			1	2	3
			1	2	3
			1	2	3
Outbound (From Plant)					
			1	2	3
			1	2	3
			1	2	3
			1	2	3

(b) Please provide any supplementary detail and comments you feel will help explain the reasons for the ratings given above.

4.0 (a) Please describe the distribution systems (warehouse locations, transfer points, consolidation centers, use of piggyback and container) used for the movements described in Question 3.

(b) If you ship by truck do you use for-hire or private carriers? (_____for hire/_____private) Please identify the for-hire carriers used.

(c) Are any of your commodity movements seasonal in nature? If yes, please describe:

(d) What problems, if any, have you encountered with transportation services and rate levels for each of the commodity movements noted above?

(e) Which of your markets and commodities are sensitive to transport costs. Please describe these markets and the nature of the competition.

5.0 (a) Please rate the importance of direct rail service to your company's operation by circling the appropriate ratin

(1) Not important (2) Of some importance (3) Important (4) Highly important (5) Indispensible

(b) Please describe your reason for the above rating.

(c) Do you have any commodity that can only move by rail? If yes, please describe.

(d) What adjustments in your company's operations would be required if direct rail service was no longer available? (Change in plant facilities, markets served, product lines).

6.0 (a) Has your company made any changes during the past ten years in modes of transport used including piggy back services? If yes, please describe movement and why the change was made.

____

____

____

(b) Do you foresee any change in your use of rail transport during the next five years?

Increase ______ Decrease ______ About the Same ______

Please describe nature and reason for any changes.

____

____

____

(c) Please indicate the commodity movements and volumes you will likely be shipping five years from now? List both inbound and outbound movements.

Commodity	From	To	Annual Volume (Tonnes)	Most Likely Mode of Transport

THANK YOU

LIST OF COMPANIES INTERVIEWED AND FINAL CONTACT PERSONS

(*INDICATES COMPANIES PROVIDING USABLE RESPONSES)

*Mr. Greg Johnson
Coop Atlantic
P.O. Box 750
Moncton, N.B.
E1C 8N5
858-6313

*Mr. David Chandler
Transportation and Distribution Manager
Bowater Mersey Paper Co. Ltd.
P.O. Box 1150
Liverpool, N.S.
B0T 1K0
902-354-3411

*Mr. D.S. Hamilton
Vice-President and General manager
Coastal Plastics Ltd.
41 Thornhill Drive
Dartmouth, N.S.
B3B 1R9
902-469-8611

*Mr. Allan Howell
Drummond McCall Inc.
P.O. Box 910
Armdale, N.S.
B3L 4L1
902-876-7861

*Mr. Wayne Mingo
William A. Fleming
P.O. Box 277
Truro, N.S.
B2N 5C1
902-845-9201

Ms. Joyce Boone
Goodfellow Inc.
P.O. Box 120
Elmsdale, N.S.
B0N 1M0
902-883-2256

Mr. Gary Rood
Transportation and Distribution Manager
Hawker-Siddeley Canada Inc.
P.O. Box 130
Trenton, N.S.
B0K 1X0
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APPENDIX D

DETAILED RESULTS OF SHIPPER/RECEIVER SURVEY

APPENDIX D

DETAILED ANALYSIS OF SHIPPER/RECEIVER SURVEY

1.0 INTRODUCTION

Chapter 6 presents a summary of results of the shipper/receiver survey conducted as part of this study. Following is a detailed analysis of the survey results for each of eight industry groups. These groups, and number of responses received for each group, are shown below. The detailed analysis by group, which is organized by the three topic areas of traffic patterns, modal issues, and service issues follows.

Industry Group	No. of Companies Responding
Building Materials	13
Chemicals	11
Steel	5
Feed, Food and Beverages	12
Pulp and Paper	4
Shipping Lines	4
Automotive Products	6
General Commodities	7

In addition to the above, two interviews were conducted with gypsum producers. These are reported in salient sections of the main report.

2.0 BUILDING MATERIALS

2.1 TRAFFIC PATTERNS (BUILDING MATERIALS)

Thirteen responding companies were in the building materials group. These companies ship lumber and plywood from British Columbia and New Brunswick, cement ingredients from Quebec and the U.S., and other building materials such as vinyl siding, roofing and insulation materials, etc., from Ontario, Quebec, and the U.S. Much of this material is processed in Nova Scotia and shipped out as cement and other building materials, destined for Newfoundland and other Atlantic provinces (largely), points in Ontario and Quebec (to a lesser extent), and to western Canada and the U.S. (to a much smaller extent).

In total, the thirteen responding companies annually ship approximately 228,400 tonnes of lumber and other building materials into Nova Scotia, and approximately 566,000 tonnes of cement and other building materials out of Nova Scotia. Refer to Exhibit 1.1.

Six of the thirteen companies ship direct from suppliers to production facilities and from production facilities to customers, while five companies operate through a system of warehouses and distribution centers in the Atlantic Region. Two companies did not identify their distribution systems.

Activity in the building industry tends to be concentrated in the nonwinter months.

EXHIBIT 1.1

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE BUILDING MATERIALS INDUSTRY (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	166,873	73	132,250	23
Truck	38,565	17	432,186	76
Marine	23,000	10	1,500	1
Intermodal	0	0	6,650	0
TOTAL	228,438	100	565,936	100

2.2 MODAL ISSUES (BUILDING MATERIALS)

Exhibit 1.1 indicates approximately 73 percent of the inbound lumber and building materials are shipped by rail, about 17 percent by truck, and about 10 percent by ocean carriers. This modal distribution is a reflection of the origins of the inbound shipments: the lumber and plywood from British Columbia tend to be shipped by rail; the cement ingredients and other building materials from Ontario and Quebec tend to be split between rail and truck; and the shipments from the U.S. are almost entirely by ocean carriers. Of the cement and other building materials shipped out of Nova Scotia, about 76 percent is shipped by truck, reflecting the fact that most of the shipments are to destinations within the Atlantic Region. Twenty-three percent of the outbound shipments go by rail, generally to points in Ontario and Quebec, and about 1 percent go by ocean carriers to the U.S.

The companies interviewed generally cited cost as the major reason for the heavy reliance on rail for inbound shipments, particularly for shipments of lumber and other wood products from British Columbia. The shippers indicated there really is no other economically feasible alternative for these shipments, considering the shipment sizes and the distances involved. For outbound shipments, the companies generally cited flexibility of trucking and its speed of delivery as the major reasons for the reliance on that mode. In general, the small shipment sizes and scattered nature of the companies' customer bases make it impractical to use other than truck for most shipments. Besides, most shippers mentioned that the destinations for their products do not have facilities for rail service. The majority of the companies employ both their private trucks and for-hire carriers, while a few use, exclusively, either for-hire or their private trucks.

The use of ocean carriers for both inbound and outbound shipments in the industry is minimal. Indeed, only 2 of the 13 companies use ocean carriers--1 for some inbound shipments, and the other for some outbound shipments. However, one of the ocean carrier users indicated his company's intention to increase their reliance on ocean containers for outbound shipments to the United States.

The majority of the companies in the industry (7 of 13) have maintained the same mode of transporation over the past ten years. One company has switched from rail to truck for outbound shipments to Newfoundland, but only because rail service to Newfoundland is no longer available. One company has made a number of changes during the past year: stopped piggyback services from Ontario and gone exclusively to truck; started using ocean containers to the U.S.; and switched from rail to truck for outbound shipments to western Canada, because of time requirements on those shipments. Another company has switched from rail to truck for inbound shipments from Ontario and Quebec because the company finds it more economical to use the tractor-trailers of an associated trucking company. In contrast to these two firms, another company has "greatly increased the use of rail for incoming goods due to lower price and quality of supply." Two companies did not indicate whether they have made any changes in modes of transport used over the past ten years.

2.3 SERVICE ISSUES (BUILDING MATERIALS)

The companies in the industry generally expressed few problems with transportation services, though two of them were concerned about the continuity of direct rail service. Among the few problems mentioned by individual companies were: occasional delays of rail shipments due to derailments and line closures; some damage to commodities shipped by rail; and the inconveniences caused by Route Canada going out of business.

With the exception of one shipper who complained about excessive truck rates, the companies in the industry did not express any dissatisfaction with current rate levels. However, companies expressed grave concern about the effects that increased transport costs could have on the industry. In particular, Quebec, Ontario and western Canada were singled out as markets highly vulnerable to competition from local and U.S. manufacturers. One shipper complained that this vulnerability is aggravated by CN Rail giving rebates to shippers in Quebec and other places, thus giving such shippers a competitive advantage.

The majority of the companies in the industry (11 of 13) consider rail service to be "highly important" (4 shippers) or "indispensable" (7 shippers). The other two rated direct rail service as being "important" or "of some importance." However, every company has at least one major commodity, inbound or outbound, whose shipment the company considers to be economically feasible only by rail.

The general consensus in the industry seems to be that the loss of direct rail service would increase costs tremendously, especially if trucks have to be used. One company estimated a 100 percent increase in their transport costs if direct rail service was no longer available. Fears were expressed that this may result in the industry's products not being competitive in the western Canada and U.S. markets, and a consequent loss of these markets. Strategies that the various companies may employ in the event of the loss of direct rail service include: altering the product mix, using fewer inputs currently shipped in by rail; closing down in Nova Scotia or moving to a city (such as Moncton) still enjoying direct rail service; moving out of the western Canada and U.S. markets; or, going out of business.

Six of the companies expect to maintain, over the next five years, their current annual volumes of commodities moved by rail, and another six anticipate an increase in both their total volumes moved and the volume moved by rail. Estimates of expected increases in total volume of shipments range from 10 percent to as much as 25 percent over five years. One company expects a decrease in the total volumes moved during the next five years, continuing a steady decline in their capacity utilization since 1981. Hence, they also expect a decrease in their use of rail during the same period.

3.0 CHEMICALS

3.1 TRAFFIC PATTERNS (CHEMICALS)

Shippers in Nova Scotia bring in petroleum products, liquified gases, fertilizer ingedients, and other chemicals, mostly from Ontario and Quebec, and smaller amounts from New Brunswick, western Canada, and the United States. Plastics, fertilizer, liquified gases, and other chemical products are shipped from Nova Scotia, largely to Ontario and Quebec, and in relatively smaller quantities to Manitoba, Europe, and the United States.

Eleven of the companies responding to our survey belong to this industry group. These companies together annually ship into Nova Scotia approximately 61,350 tonnes of chemicals while shipping out approximately 126,800 tonnes of petroleum products, plastics, fertilizer, liquified gases, and other chemicals. Refer to Exhibit 1.2.

All inbound and most outbound shipments move directly from suppliers to plants in Nova Scotia, and from plants in Nova Scotia to customers. A few companies maintain warehouses within the Atlantic Provinces for distribution of the outbound commodities.

Shipments in the industry are generally steady throughout the year, the exceptions being outbound shipments to Europe, which take place only in the summer months, and asphalt, which is shipped out only between May and September. Shipments of petroleum products are highly seasonal; one company explains that 70 percent of one of its products is consumed between October and March, and most of another product is consumed during the summer months.

EXHIBIT 1.2

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE CHEMICALS INDUSTRIES (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	41,005	67	104,893	83
Truck	18,846	31	21,606	17
Marine	1,500	2	300	0
Intermodal	0	0	0	0
TOTAL	61,351	100	126,799	100

3.2 MODAL ISSUES (CHEMICALS)

Exhibit 1.2 suggests that, for the companies responding to the survey, 67 percent of the shipments of chemicals into Nova Scotia is by rail, 31 percent is by truck, and 2 percent by ocean carriers. For outbound shipments, 83 percent is by rail, while the remaining 17 percent is mostly by truck. A small percentage of outbound shipments is by ocean carriers.

The most common reasons cited by shippers for the dominance of rail for both inbound and outbound shipments are cost and the special nature of the commodities carried. Several of the companies indicated that the chemicals carried by rail could also be carried by special trucks, but it is much less expensive to ship by rail since, in the words of one shipper, "rail allows four times the volume carried by truck per car." One company adds that because of the special nature of one outbound commodity and the regulations governing its storage, shipping by rail has the advantage of providing rolling storage when placed at branches.

The major reasons for the use of truck for both outbound and inbound shipments include the speed and flexibility of delivery by truck and the generally small sizes of the shipments involved. The sole use of the ocean carrier mode was for shipments overseas, where there is no other feasible alternative.

A number of the companies have switched from rail to truck for shipment of some inbound commodities over the past ten years. One company cited poor service and very slow delivery by rail as the reasons for this change. The other company switched because technological advances in the packaging of one product made it susceptible to damage by rail.

3.3 SERVICE ISSUES (CHEMICALS)

Companies in the industry did not report any major problems with transport services. Indeed, one shipper indicated being very satisfied with rail service, and only wished that rail rates were a little lower, while another company would have liked to have rail service for some liquid bulk shipments currently moving by truck. The few complaints voiced involve some frustrations with delays due to disruptions on rail lines. On the trucking side, two shippers complained about what they considered to be high rates; one shipper questioned why the inbound rate from Ontario is twice that from Quebec.

The companies which export products to Quebec, Ontario, western Canada, and the U.S. consider these markets to be very sensitive to transport costs because of local competitors in these markets. One company indicated their plans to export some products to the northeastern United States are contingent on the transport rates, since they are in a "high-volume, low-margin business for which low-cost transportation is critical." Another company estimates that transportation alone represents 20 to 35 percent of the delivered cost of a major product whose market price is the most important feature in its marketing program.

With the exception of one company (all of whose shipments, both inbound and outbound, are by truck and therefore did not consider direct rail service to be important to the operation), the companies in the industry ranked direct rail service as highly important or even indispensable to their operations. All these companies have at least one critical commodity whose shipment was considered to be either physically or economically feasible only by rail. Four companies indicated they would switch to truck in the event of loss of rail service. For three companies, the switch to truck implies heavy capital investments in loading and unloading facilities or special tanker trucks. The fourth company would cancel a product line which currently requires inputs from the U.S. by rail. One company has the capability to switch to the marine mode but currently uses rail because of the economics of the movement. This shipper added, however, that in the event that the marine mode proves uneconomical, they could go out of business. The last three companies in the group were of the opinion that loss of direct rail service would seriously threaten the economic viability of their operations. For example, one of these companies explained that the market for one of its major products is New England. This market can only be served by rail, since the nature of the product and the distance moved makes the cost of shipping by truck prohibitive. Therefore, if this market is not available by rail, the product would have to be destroyed, at a significant economic penalty.

Three of the companies do not foresee any changes in their use of rail transport during the next five years and expect the total volumes shipped by their current modes to remain at about the same levels during that period. Five companies anticipate an increased use of rail service during the same time frame. Reasons cited for the anticipated increases include normal company or market growth, the possibility of plant extension to add a new product line, and plans for expansion into the northeastern United States.

4.0 STEEL

4.1 TRAFFIC PATTERNS (STEEL)

Five of the companies responding to our survey are in the steel industry. These five companies together bring into Nova Scotia annually approximately 77,000 tonnes of steel and steel ingredients, largely from Ontario and Quebec, and in smaller amounts from Saskatchewan, the U.S., and overseas. In total, the companies ship out approximately 101,600 tonnes of steel and steel products mainly to Ontario, Quebec, and the Atlantic Provinces, and in smaller amounts to Manitoba and the U.S. See Exhibit 1.3.

Inbound shipments are generally direct from suppliers to plants in Nova Scotia. However, two of the companies maintain warehouses in the Atlantic Provinces and the U.S. for storage and distribution of outbound steel products.

Two of the five companies indicated some seasonality in the shipment of their products: one company's outbound shipments decline during the winter months, while the other company's outbound shipments tend to increase during the same period. The other three companies maintain a relatively steady level of shipments throughout the year.

4.2 MODAL ISSUES (STEEL)

Responses to our survey suggest 44 percent of the steel and steel ingredients moving into Nova Scotia are brought in by rail, 36 percent by truck, and 20 percent by ocean carriers. Of the steel and steel products shipped out of Nova Scotia, the respondents indicated 47 percent are moved by rail and 53 percent by truck.

EXHIBIT 1.3

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE STEEL INDUSTRY (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	34,120	44	46,500	47
Truck	27,990	36	54,100	53
Marine	15,000	20	0	0
Intermodal	0	0	0	0
TOTAL	76,910	100	101,600	100

Mode choices in the industry have no consistent overall relation to the origin or destination of the shipments, excepting the inbound shipments from overseas which are feasible only by ocean carriers. Rather, mode choices in the industry appear to be dictated by the nature of the commodities shipped. While cost was most often cited as the reason for the use of rail, the underlying economics of the movements are dictated by the large volumes, bulk nature of the commodities, and the particular shapes and forms of steel shipped. One company ships in raw steel in a form that requires small cranes for loading and unloading. The form is too heavy to move economically by truck, and shipment sizes are not large enough to move economically by ocean carriers. Two companies ship steel (one inbound and the other outbound) in longer lengths than can fit into trucks or ocean carriers. These companies are, therefore, captive to rail for these movements.

The major reasons cited by shippers for the use of the truck mode are speed of delivery (for inbound shipments) and flexibility of service and delivery (for outbound shipments). One company which uses truck for almost all inbound and outbound shipments indicated that "rail is too unpredicatable in delivery, and the commodities shipped are subject to excessive damage." Among the companies surveyed, one uses its own trucks for both inbound and outbound movements, one uses common carriers for inbound shipments and private trucks for outbound shipments, and the three others rely exclusively on common carriers for all their trucking movements.

There have not been any major changes in modes of transport used by the firms surveyed during the past ten years. For cost reasons, one company has changed the source of some inbound commodities from central/west Canada to overseas, necessitating a switch from rail to ocean carriers for those shipments. Another company started using piggyback during the last year in an attempt to continue to use rail service for smaller shipments where direct rail is not economical. It may be pointed out, however, that the primary motivation of this company in their mode choices is loyalty to the railway, unless economically impractical.

4.3 SERVICE ISSUES (STEEL)

The companies surveyed do not have any major problems with transportation services or rates. Only one company mentioned having a minor problem with in-transit damage by truck.

All five respondents consider their markets to be highly sensitive to transport costs. One company estimated that transportation is about 15 percent of the delivered cost of their product, and that any higher costs would make them uncompetitive. Another company with exports to the United States indicated this market is highly competitive with several foreign competitors.

The importance of direct rail service to these five companies ranged from "of some importance" to "indispensable." The two companies who have some movements considered captive to rail rated direct rail service to be "highly important" and "indispensable." Two other companies who consider direct rail service to be "important" explained that the commodities currently move by rail because it is more economical. However, one indicated that the company believes they get reasonable rates on their trucking movements because of the existence of the railway as an alternative. As a result, the company has made a conscious decision to maintain some shipments by rail. The only company to rate direct rail service as "of some importance" ships only one commodity by rail, even though the company has a direct rail siding into their plant.

Responses to the loss of direct rail service reflect the degree of importance attached to the service. The company that ships only one commodity by rail would not mind losing the service. Two companies would switch to truck and change their sources of supply, but both believe that this could be expensive. One shipper thinks the loss of rail service may put the company out of business. The two companies who have some shipments captive to rail have very different sets of problems to deal with: one shipper believes his company would merely switch to purchasing steel from overseas, while the other envisages "inventing a new method of moving" its products and severe changes in logistics.

Only one of the companies surveyed expects to maintain the same level of use of rail service during the next five years. One shipper believes that, because of the greater convenience of trucking, his company would decrease the use of rail transport while increasing the overall volume of shipments moved over the next five years, which implies a switch from rail to truck. Three companies expect to increase both their use of rail and the total volumes of commodities they move. For two of these companies, the expectations are based on plans to consolidate production facilities or plans to modernize existing plants. The other company believes that trucking rates will go up and rail rates will go down over the next five years and intends to take advantage of the lower rail rate by switching from truck.

5.0 FEED, FOOD AND BEVERAGES

5.1 TRAFFIC PATTERNS (FEED, FOOD, BEVERAGES)

Companies in Nova Scotia bring into the province annually wheat, barley, corn, other grains, feed ingredients, fresh fruits and vegetables, and other food products. Some of these companies also ship out of the province manufactured feed, food products, beverages, and salt.

Twelve of the companies responding to our survey are in the feed, food or beverage industries. In total, these companies annually ship into Nova Scotia approximately 963,000 tonnes of wheat, barley and other grains from western Canada, corn from Ontario and western Canada, feed ingredients from Quebec and the U.S., fish and other food products from New Brunswick, Quebec, Ontario, and the U.S., and fresh fruits and vegetables from New Brunswick, Maine, the southern United States, and Mexico. They also ship out of Nova Scotia annually approximately 554,700 tonnes of food products, manufactured feed and beverages to the Atlantic Provinces, Quebec, Ontario, the U.S., and overseas. See Exhibit 1.4.

Seven of the companies ship direct from suppliers to warehouses located at the plant sites, and from plants to customers. The other five maintain warehouses or consolidation centers outside of plant sites in various locations in New Brunswick, Quebec, and the U.S.

Four of the twelve companies surveyed maintain a fairly consistent volume of shipments over the year, while the others exhibit seasonal peaks. Three companies highlighted the Christmas season as a major peak for their shipments of processed food and confectionaries, with the rest of the year remaining fairly even. Another company pointed out that even

EXHIBIT 1.4

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE FEED, FOOD AND BEVERAGE INDUSTRIES (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	590,140	61	55,600	10
Truck	196,214	20	84,447	15
Marine	172,000	18	408,000	74
Intermodal	5,300	1	6,650	1
TOTAL	963,654	100	554,697	100

though the food business is very seasonal, with different commodities shipped at different times of the year, the total volumes shipped do not change very much over the year, except at christmas. Feed producers consider fall and winter to be the busiest time of the year, while beverage producers have a heavy concentration of activities in the summer months.

5.2 MODAL ISSUES (FEED, FOOD, BEVERAGES)

Responses to our survey suggest that approximately 61 percent of the grains, feed ingredients, and other food products shipped into Nova Scotia are brought in by rail, largely from western Canada and in smaller amounts from Quebec, Ontario, New Brunswick, the U.S., and Mexico. The truck mode accounts for approximately 20 percent of the inbound shipments of these commodities, mainly shipments originating from New Brunswick, Quebec, Ontario, and the U.S. Ocean carriers are used to bring in approximately 18 percent of the commodities inbound, mainly grains from western Canada and fish and other products from the U.S., while piggyback accounts for about 1 percent of the commodities inbound.

Of the outbound shipments, 74 percent are shipped out by ocean carriers, nearly all of it being salt to Newfoundland, Quebec, and the U.S., and the rest comprising feed, food and beverages to New Brunswick, Newfoundland, and overseas. Ten percent of the outbound shipments are moved by rail, mainly to New Brunswick and Quebec, and about 15 percent are moved by truck--about half of that being salt destined for New Brunswick, Quebec, and the U.S., and the rest being feed, food and beverages to various points in Canada and the U.S. Piggyback accounts for about 1 percent of outbound shipments, mainly to Newfoundland and New Brunswick.

All seven companies who ship by rail inbound mention cost as the major reason for using that mode. The underlying factors dictating the economics of these movements are the large volumes and distances moved, and the bulk nature of the commodities. Other supplementary reasons given by some individual shippers include: the possibility of less damage to some commodities due to their special nature; the bulkiness of the commodity moved, making the delivered price uncompetitive if moved by truck; and the shortage of trucks from western Canada and the U.S. to Nova Scotia during the winter months. Only one company uses rail for outbound movements, and the reason given is the large volume moved and the special equipment required, making rail marginally less expensive than other modes for that movement.

The major reasons cited by companies for using truck were the speed of delivery, the small sizes of the shipments, and cost. Two companies specifically mentioned that rail is too unreliable and too slow. Indeed, one shipper insisted that speed of delivery is so important to his company's operation that his company will still use truck, even if rail costs were ten times less. Two other companies use truck because they have no other alternative: one because of the special equipment required to deliver their product, and the other because the company has no direct access to rail.

The three companies who use ocean carriers inbound or outbound cite cost as the major reason for its use, while the only company using piggyback services does so because of its speed of delivery.

Six of the twelve companies surveyed have maintained the same modes of transport during the last ten years, with one company indicating they had occasionally used the grain handling facilities at Halifax and switched to ocean carriers in an attempt to reduce manufacturing costs. The other six companies have made the following changes during the last ten years: two companies have shifted an undisclosed percentage of their movements from rail to water because of more competitive rates from ocean carriers; one company switched to piggyback three years ago (from 30 percent rail to about 5 percent rail) because of its speed of delivery; one company increased its use of piggyback by an undisclosed amount because of increased speed of delivery by piggyback and other service considerations; one company has switched from rail to truck for some commodities because of direct deliveries to customers in New Brunswick and Quebec, thereby eliminating warehouse costs; and one company switched from truck to rail for shipment of two commodities, one inbound from Alberta, because of the greater volume that can be brought in at less cost, and the other inbound from the U.S. because heavy increases in the consumption of the commodity makes it possible to bring in larger volumes by rail.

5.3 SERVICE ISSUES (FEED, FOOD, BEVERAGES)

The majority of the companies surveyed (eight) did not report any major problems with current transportation services or rates. However, four companies expressed some dissatisfaction. Two shippers complained about the slowness and poor service of the railway. To quote one shipper, "the basic problem with rail has been the availability of equipment when we need it and the distances between the rail stations and our warehouses, especially in the winter months, what with derailments, delays, etc." Another shipper expressed the view that "CN is a monopoly, so its rate levels are difficult to compare with any other. For example, why do Saint John and Halifax have such big differences in rates? The attitude of CN makes things a little difficult." One shipper cited slow delivery times, unavailability of equipment, and poor dispatch times on the part of truckers. This shipper was particularly unhappy about what he called "dirty equipment," and added that: "some truckers are very unprofessional. They do not realize that food requires very clean equipment. We have to check and clean most of the equipment ourselves."

All 12 companies are of the opinion that their markets are very sensitive to transport costs, due to the nature of the industry. One feed producer explained that their customers (mainly livestock producers) have to compete with producers in Quebec and the U.S. and that, since 85 percent of the industry's inputs have to be imported, transportation costs in Atlantic Canada are extremely important. Food and beverage producers single out Quebec, Ontario, and the U.S. as markets characterized by heavy competition from local and overseas suppliers and which would be in jeopardy if transport costs go up.

There is a fairly wide variation in how companies view direct rail service in the industry. Two shippers consider direct rail service "not important" because they either do not use rail at all or use it to bring in relatively low-cost commodities. One shipper rated direct rail service to be "of some importance" because his company uses the service only about three or four times a year for some inbound commodities. Four shippers rated direct rail service as "important" since at least one major inbound shipment by each company is by rail, either because of better service by rail or because of the economics of the movement. One shipper considered direct rail service to be "highly important" because the company's major inbound commodity is difficult to move in the quantities needed any other way. Four shippers consider direct rail service to be "indispensable." All four believe that, while it is technically possible to switch to alternative modes for shipping of some major inbound commodities, the cost of alternative shipping is so high as to make such movements uneconomical.

Reactions to the loss of direct rail service parallels the views expressed about the desirability of the service itself. The three companies who do not currently use rail to any appreciable extent do not expect to make any big adjustments. The four companies who consider rail service to be important would take various steps to switch to alternative modes (two will switch to truck, one to piggyback, and the other to ocean carriers) and build temperature-controlled storage facilities to handle the change in logistics. Two of these companies mention that such a change will be costly and could create hardships. The shippers who consider direct rail service to be highly important or indispensable expect their companies to face major problems. Most expressed the fear that being forced to switch to truck would make their manufacturing costs so expensive as to make their products uncompetitive against similar products from other provinces and force them out of business. The increase in transport costs by truck was variously described as "astronomical" and "prohibitive."

Six of the companies surveyed believe they will maintain their current volume of shipments and their use of rail service during the next five years. Three companies expect to increase their total volumes shipped and their use of rail service during the same period. Two companies who use rail only occasionally now will not likely use it at all in the future. One shipper declined to speculate on his company's future plans, and his response provides some insight into the feed business: "We can't tell the level of our future rail use because we may change year by year between rail and water, depending on which one gives us the more competitive price at any time. In the feed business you never know about future volumes. Most of our customers are on the quota system and can't increase production too much."

6.0 PULP AND PAPER

6.1 TRAFFIC PATTERNS (PULP AND PAPER)

Companies in the pulp and paper industry bring into the province various chemicals and ship out wood pulp and newsprint.

Four of the companies responding to our survey are in the pulp and paper industry, but one company did not provide any figures on the volumes of inbound and outbound shipments. The three respondents who provided totals together ship into Nova Scotia annually approximately 76,600 tonnes of acids and other chemicals mainly from New Brunswick, Quebec, and Ontario, with smaller quantities from Alberta, Saskatchewan, and Europe. They also ship out approximately 758,907 tonnes of pulp and newsprint to New England and the eastern parts of the U.S., East and Central Canada, and overseas. See Exhibit 1.5.

All inbound shipments move direct from suppliers to plants in Nova Scotia, and most outbound shipments move direct from plant warehouses to Canadian customers. However, two of the companies maintain warehouses in the United States which serve as distribution centers.

All four companies maintain approximately the same volume of shipments throughout the year.

6.2 MODAL ISSUES (PULP AND PAPER)

Survey respondents reported 49 percent of the acids and other chemicals shipped into Nova Scotia by the companies in the industry is by rail. These shipments originate largely from new Brunswick, Quebec, and Ontario, and in relatively smaller amounts from Alberta and Saskatchewan. Approximately 38 percent of the inbound materials are brought in by ocean carriers from

EXHIBIT 1.5

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE PULP AND PAPER INDUSTRY (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	37,794	49	429,185	57
Truck	9,650	13	63,039	8
Marine	29,120	38	265,390	35
Intermodal	0	0	1,293	0
TOTAL	76,564	100	758,907	100

Europe, the United States, and other points in Canada, while approximately 10 percent of the materials are brought in by truck, mainly from New Brunswick.

For outbound products, approximately 57 percent are shipped by rail to the eastern parts of the U.S. and Canada, 35 percent are shipped by ocean carriers to other points in the U.S. and overseas, and 8 percent are shipped by truck to New Brunswick, New England, and other points in east/central Canada. A relatively negligible quantity of the outbound products are shipped by piggyback to East/Central Canada.

Various factors contribute to the decision to use any mode for any particular shipment. Among these are: the volumes purchased, the cost and convenience of handling upon arrival at origin or destination, the nature of the commodity and any special equipment required for the movement, and the availability of storage facilities for that commodity.

The major reason for the use of rail inbound is the overall cost of the movement, determined by the volumes and distances moved, the special nature of the commodity, and storage and handling requirements. For outbound shipments, the volumes and/or distances involved in some movements generally preclude the truck, and rail is chosen over marine because of its greater flexibility and its not requiring investments in large storage facilities, as marine does.

The marine mode is used both inbound and outbound only in circumstances where there is no other alternative (such as in shipments to and from overseas) or where the volumes moved and distances involved are so large as to make it economically more attractive than rail, even with the more extensive storage facilities required.

The major reason cited by shippers for the use of truck inbound are cost and speed of delivery, which is not surprising since trucking inbound almost exclusively originates in New Brunswick. Trucking is also used for pulp and newsprint outbound to various points in eastern Canada and eastern U.S., mainly because its speed of delivery and flexibility are suited for the relatively small sizes and short distances involved in these shipments. Three of the four companies use exclusively for-hire trucking for both inbound and outbound shipments, while the fourth uses the company's own trucking fleet.

6.3 SERVICE ISSUES (PULP AND PAPER)

The companies surveyed did not indicate having any major problems with rate levels or transportation services provided by the trucking mode. Some criticisms were directed towards rail service including: delays at interchange points, especially during winter months; railcar shortages and shunting problems on night shifts and weekends; the availability of special equipment such as cushion underframe cars; and damage to newsprint due to moisture.

All four companies consider the market for newsprint to be highly competitive. One company estimates that 12 to 15 percent of the value of the delivered product is due to transportation costs.

The companies surveyed rated direct rail service from "important" to "indispensable." One shipper indicated about 65 percent of his company's movements is by marine, but that the company considers direct rail service to be important, since the option to move by rail and truck helps keep marine rates competitive. Two shippers consider direct rail service to be highly important for their operations because they believe their volumes of inbound and outbound shipments would be very difficult to move at a reasonable cost due to the long distances involved. The fourth shipper considers daily direct rail service to be indispensable for their inbound movements and highly important for their outbound movements because of the nature of the commodities and the volumes and distances moved.

Reactions to the loss of direct rail service reflect the importance to the company of the service. One company would switch to truck, requiring increased storage area for chemicals and major changes in the warehouse loading area. Another company believes truck is not viable and would consider switching to marine or intermodal services, which would require extensive changes to present facilities. A third company would switch to marine for outbound shipments, which would require new loading facilities and warehouses. For inbound shipments, the company admits that they would be hard pressed to continue operations without direct rail service, since they have some commodity movements captive to rail.

Two of the companies surveyed expect to decrease their use of rail service in the next five years: one company because they expect abandonment of the rail line on which they are currently operating, while the other intends to increase its use of the marine mode for shipments to the U.S. However, both companies expect to increase their total volumes of shipments. Two other companies expect to increase both their total volumes of movements and their use of rail service because of anticipated increases in production due to increase in demand for their products.

7.0 SHIPPING LINES

7.1 TRAFFIC PATTERNS (SHIPPING LINES)

Several companies ship containers from Montreal and Toronto to the Port of Halifax for further transshipment overseas, as well as moving containers from overseas through Halifax, mainly to Montreal and Toronto, and in smaller quantities to the other Atlantic Provinces.

Four of the companies responding to our survey are in the container shipping business. These four companies together ship into and out of Nova Scotia annually approximately 727,880 tonnes and 581,460 tonnes, respectively, of containerized goods. Movements of containers to and from the province by shipping line respondents are presented in Exhibit 1.6.

All four companies ship direct from container terminals in the Port of Halifax to terminals in Montreal and Toronto, and also direct between various points in the Atlantic Provinces and the container terminal at Halifax. Different types of commodities are carried, depending on the season. For example, while imports from overseas are fairly steady over the year, exports of fish, lobster, etc., are seasonal. However, the volume of containers moved is fairly constant over the year.

7.2 MODAL ISSUES (SHIPPING LINES)

Survey respondents indicated 96 percent of the containers coming into Nova Scotia on its way overseas arrive by rail and 4 percent by truck. Of the containers arriving at Halifax from overseas and moving out of the province, 87 percent are shipped out by rail, and 13 percent are shipped out by truck.

EXHIBIT 1.6

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE CONTAINER SHIPPING INDUSTRY (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	701,880	96	503,100	87
Truck	26,000	4	78,360	13
Marine	0	0	0	0
Intermodal	0	0	0	0
TOTAL	727,880	100	581,460	100

NB: To avoid double counting, containers leaving and arriving at Halifax by ship are not included.

Mode choice decisions in the industry reflect the origins and destinations of the shipments. Invariably, all shipments to and from Montreal and Toronto are moved by rail, largely due to the costs and volumes involved. Indeed, one shipper believes it practically impossible to move the volumes involved by truck. On the other hand, shipments to and from the other Atlantic Provinces are moved almost invariably by truck because the speed of delivery and flexibility of trucking is suited to the short distances, low volumes, and the scattered customer base involved in such shipments.

None of the responding companies had made any major changes in modes of transport over the last ten years. One company expects to start using double-stacked containers in the near future.

7.3 SERVICE ISSUES (SHIPPING LINES)

The companies surveyed do not have any major problems with current transportation services and rates. However, some concern was expressed about future transport rates. One shipper explained that containers come into the Port of Halifax in order to secure cargo from Montreal, which means shipping companies have to absorb the cost of transportation of the goods from Montreal to Halifax. Hence, reasonably low transport rates are absolutely vital if the Port of Halifax is to remain competitive against Montreal, Toronto, and other North American east coast ports, notably Baltimore and New York.

All four companies surveyed consider direct rail service to be indispensable for their operations, since the sheer volumes moved all but preclude truck as a viable alternative. Therefore. all four companies consider the loss of direct rail service to be a major disaster. One company estimates trucking costs to be about three times the cost by rail, while another company believes that costs could go up by as much as five to six times the current rail costs. The companies suggested their markets would be lost in such circumstances, driving them out of the Port of Halifax or out of business completely. One company finds it difficult to even contemplate the possibility of the loss of direct rail service, adding flatly that "there wouldn't be enough trucks to handle all the traffic."

Two of the companies surveyed do not forsee any changes in their use of rail transport or in total volumes moved over the next five years. One cautions, however, that "free trade could change markets from Europe to the U.S., shifting origins and destinations of movements but, hopefully, not changing volumes." Two other companies expect to increase their use of rail transport over the next five years. One company expecting substantial increases in volumes moved cautions that these increases would be contingent on rail services being upgraded and improved and CN's sensitivity to the dynamics of the industry, namely competition from east coast U.S. ports.

8.0 AUTOMOTIVE PRODUCTS

8.1 TRAFFIC PATTERNS (AUTOMOTIVE PRODUCTS)

Companies in this industry bring into Nova Scotia cars, trucks, spares, and tire ingredients from Quebec, Ontario, the Far East, Europe, and the United States. The same companies ship out cars, trucks, spares, and tires to destinations all over Canada and the United States.

Six companies involved in the shipping of automotive products in Nova Scotia responded to our survey. As shown in Exhibit 1.7, these six companies together ship annually into the province approximately 107,000 tonnes of automotive products and tire ingredients--a large part of the tonnage coming from Ontario and the United States, and a smaller proportion from Europe and Vancouver. The six companies together also annually ship out of the province approximately 118,420 tonnes of automotive products--a greater proportion of the tonnage going to the U.S., a relatively smaller proportion to Quebec and Ontario, and in much smaller quantities to the other Atlantic Provinces and western Canada.

Each of five of the companies has a center in Nova Scotia which acts as a transfer point for automotive products from Europe to eastern Canada or as a redistribution point for automotive products from Vancouver to other points in the Atlantic Region. The sixth company distributes automotive products to 21 destinations in the U.S. and 10 destinations in Canada.

Four of the companies indicate that their movements are fairly even over the year, while two companies mention some seasonality in their shipments, with fall and spring being peak shipment periods.

EXHIBIT 1.7

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE AUTOMOTIVE PRODUCTS INDUSTRIES (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	80,741	76	87,000	73
Truck	13,183	12	31,420	27
Marine	13,050	12	0	0
Intermodal	0	0	0	0
TOTAL	106,974	100	118,420	100

8.2 MODAL ISSUES (AUTOMOTIVE PRODUCTS)

Survey respondents indicated that approximately 76 percent of their inbound shipments of automotive products arrives by rail from Ontario, Vancouver, and the U.S.; approximately 12 percent arrives by ship from Europe; and approximately 12 percent arrives by truck from Quebec and the U.S. Of the shipments of automotive products outbound, approximately 73 percent is shipped out by rail, mainly to the U.S., and in smaller quantities to Quebec, Ontario, and western Canada; and approximately 27 percent is shipped out by truck to various points in Canada.

The major reason cited for the use of rail is economy, reflecting the volumes and distances moved, with other supplementary reasons being the special nature of the commodity moved, and the need to limit damage to the commodity. Two major reasons are given for the use of truck: its speed of delivery, and the special nature of the commodity. Of the three companies shipping by truck, two do so because the shipments are outbound to destinations in Atlantic Canada where rail is not a viable alternative or not available. Both shippers mention being captive to the only company in the Atlantic Region equipped to move automobiles by road to various destinations in the region. The third company using the truck mode, a major shipper/receiver tonnagewise in the industry, does so because of its speed of delivery. Indeed, this company adds that transit times are considered so critical in the industry that some commodities that would normally move economically by rail are now moving by truck. The company uses common carriers for both inbound and outbound shipments.

Five of the six companies surveyed in the industry have maintained the same modes of transport of their commodities since starting operations in Nova Scotia: four companies have made no changes during the past ten years, and another company has only recently moved to the Port of Halifax from the Port of Montreal. The sixth company has stopped using the marine mode because they found the transit times unacceptable.

8.3 SERVICE ISSUES (AUTOMOTIVE PRODUCTS)

Only two of the six companies surveyed indicated having no major problems with transportation services or rates. Three companies mentioned some service-related problems with rail: the condition and availability of equipment; trains arriving at the Autoport behind schedule; and damage problems due to the special nature of the commodity. One company expressed some dissatisfaction with the lack of competition for freight shipment contracts due to the Autoport being controlled entirely by CN and is of the opinion that current volumes of the total industry should dictate more competition.

Most respondents consider their markets to be sensitive to transport costs, and two shippers mentioned the Atlantic Region as a particularly sensitive market. However, the response of one shipper may provide a greater insight into the issue: "We are not very sensitive to transport costs. The consumer pays for increases in transport costs, and our competitors would experience the same increases, so that is not our worry. Only the consumer loses. On the other hand, since it affects the ability of the consumer to purchase our products, you could say that we are sensitive to transport costs."

The companies surveyed rate direct rail service from "important" to "indispensable." The companies are of the opinion that the economics of the movements make trucking uncompetitive and that service considerations rule out ocean carriers. Hence, the prevailing view is that rail is the most efficient mode currently existing for the industry's shipments. One shipper adds, however, that "if conditions change and a better alternative comes along, we will use it. It is important to us today, but who knows about the future? "

Five companies currently using rail anticipate substantial increases in cost to consumers of their products if direct rail service was no longer available. In the event of dramatic increases in costs, one company will stop using the Port of Halifax, another will move their distribution center from Halifax to Moncton, and a third will consider moving the products direct from the Far East to Halifax by ship. The sixth company in the survey considers itself captive to rail for the movement of an important inbound commodity. Not only does the nature of the commodity make it uneconomical to move by truck, the required specialized equipment is not readily available, and investment in that type of trailer is very expensive. The company anticipates extensive changes in current facilities if direct rail service was no longer available.

Two of the companies surveyed expect to maintain their use of rail at about the same as current levels over the next five years, while increasing the total volumes of shipments made. Two other companies have plans to expand their markets in the Atlantic Region and expect to increase their use of rail service during the next five years. Two companies declined to speculate on their future rail use, on the grounds that too many variables enter that decision for a quick answer to be made.

9.0 GENERAL FREIGHT

9.1 TRAFFIC PATTERNS (GENERAL FREIGHT)

The shippers in this category include wholesalers, retailers, freight transporters, and small manufacturers. Seven companies are grouped in this category. In total, these companies annually ship into Nova Scotia approximately 262,010 tonnes of general commodities; mainly from Ontario, Quebec, and overseas; and in relatively minor quantities from the other Atlantic Provinces, western Canada, and the U.S. They ship out approximately 7,200 tonnes of general commodities to Newfoundland, Ontario, Quebec, and western Canada. See Exhibit 1.8.

The retailers and wholesalers responding to the survey use consolidation centers in Toronto and Montreal and ship from these to warehouses or retail outlets in Nova Scotia. One small manufacurer maintains warehouses in Ontario, Calgary, and Vancouver, while another ships direct from suppliers to the company plant in Nova Scotia, and from the plant to customers.

Five of the companies maintain a fairly steady volume of movements throughout the year, while two companies have their peak movements (estimated by one to be about 50 percent of annual volume) in the last three months of the year (pre-Christmas season).

9.2 MODAL ISSUES (GENERAL FREIGHT)

Survey respondents indicated approximately 33 percent of their general freight coming into Nova Scotia arrives by rail from Quebec and Ontario; approximately 39 percent arrives by ship from overseas; approximately 18 percent arrives by truck, mainly from Quebec and Ontario, and in smaller quantities from New Brunswick, western Canada, and the U.S.; and approximately 10

EXHIBIT 1.8

SHIPMENTS INTO AND OUT OF NOVA SCOTIA BY RESPONDENTS IN THE GENERAL COMMODITIES INDUSTRIES (tonnes)

Mode	Inbound		Outbound	
	Volume	Percentage	Volume	Percentage
Rail	87,280	33	2,250	31
Truck	46,750	18	4,954	69
Marine	100,800	39	0	0
Intermodal	27,180	10	0	0
TOTAL	262,010	100	7,204	100

percent arrives by piggyback from Quebec, Ontario, western Canada, and the United States. Of the outbound shipments of general commodities, approximately 69 percent goes by truck to Newfoundland, other Atlantic Provinces and Ontario, and approximately 31 percent goes by rail to western Canada.

The major reason (for most companies the only reason) cited for the use of rail both inbound and outbound is economy. One manufacturer added reliability and volume moved as supplementary reasons for his company's use of rail, while another added that rail was convenient, since they move inbound bulk commodities that are not quite time-sensitive.

All users of trucking, whether inbound or outbound, mention speed of delivery as the major reason for its use. Supplementary reasons given by individual shippers include flexibility, reliability, and less damage to products. Of the six companies using the trucking mode for some movements, one uses both company trucks and for-hire carriers, two use only company trucks, and three rely exclusively on for-hire carriers.

The two users of piggyback services for inbound shipments have different reasons for usage of the service: one company because it offers them the best combination of speed of delivery and heavy volumes moved, and the other company because it offers them the best combination of economy and flexibility of delivery to retail outlets.

Only two of the companies surveyed have not made any changes in modes of transport used during the last ten years. One company was using 100 percent rail boxcars until about three years ago, when they changed to about 50 percent piggyback because of its greater speed of delivery and availablity of equipment. Another company used, until last year, a combination of rail boxcars (33 percent) and piggyback services (67 percent) for their inbound shipments, but have switched to 100 percent piggyback. Yet another company has drifted away from 100 percent piggyback to about 20 percent trucking for shipments to western Canada because of time requirements on those shipments. Two other companies have gradually moved from rail to truck; one because the higher speed of delivery and reliability enables them to increase frequency of shipments and reduce inventory costs, and the other because of the greater flexibility of delivery afforded by trucking.

9.3 SERVICE ISSUES (GENERAL FREIGHT)

Survey respondents did not report any major problems with transportation services or rate levels. Two companies mentioned occasional delays of shipments by rail and by piggyback as minor problems.

All seven companies reported their markets are sensitive to transport costs. One retailer explained that increases in transport costs affect the company directly because they cannot adjust the cost of their merchandise to reflect such increases, since their prices are predetermined and printed in catalogs. One manufacturer explained that, because of the peculiar nature of the business, transportation is a major part of their total expenses, due to the low volumes moved and the high levels of service expected. The company believes their markets in Quebec, Ontario, and Maine would be severely damaged by increases in transport costs. Another manufacturer added that, though transportation makes up only a small percentage of total costs, the company is competitive in Quebec and Ontario because of the transport subsidy and that their market in the west is very sensitive to transport costs with strong competition from local and U.S. manufacturers.

Responses in the survey cover the spectrum of the importance of direct rail service. Two companies did not consider direct rail service to be important for their operations; one relies entirely on trucking, and the other uses exclusively piggyback services. One company considers direct rail service to be important, because it is an effective complement to the road transport of their goods. In the shipper's own words, "we could live without it, but it would be nice to have." Two other companies--one a manufacturer and the other a retailer--consider direct rail service to be highly important for their operations because both bring in a major portion of their inbound commodities by rail. The other two companies--both freight shipping companies--consider direct rail service to be indispensable: one because the company is set up specifically to use rail, and the other because, in the shipper's own words, "we couldn't move our commodities without it."

Two of the companies will not be affected by the loss of direct rail service because they either do not use it or have already taken steps to minimize their dependence on the service. Two other companies could switch to trucking relatively easily, with no major adjustments other than increases in trucking fleets and rearrangement of distribution networks. The three remaining companies in the group would have greater difficulty adjusting to the loss of direct rail service. One would have to convert the entire operation from rail to truck; another will try different sources such as the U.S. or overseas for their inbound commodities, but believes that it would be difficult to remain competitive; and the third company will try to find another way to move the commodities, or go out of business.

All the companies surveyed expect to increase the total volumes of commodities they move during the next five years. The five companies who use direct rail service expect to maintain (three companies) or increase (two companies) their current levels of usage of rail service over the next five years.